Foss, Gertrude M.
Thesis
1938

Language comprehension skills of mentally retarded children.

BOSTON UNIVERSITY

SCHOOL OF EDUCATION

Thesis

LANGUAGE COMPREHENSION SKILLS OF MENTALLY RETARDED CHILDREN

Submitted by

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(B.S. in Ed., Boston University, School of Education, 1935)

In partial fulfillment of the requirements for the degree of

Master of Education

1938

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I N T R O D U C T I O N

INTRODUCTION

The success or failure of children in school has been attributed to many factors and many conditions and reasons have been given for pupil attainments and deficiencies. There are many measures used in judging children, but reading in the primary and the intermediate grades is the foremost criterion for estimating school achievement.

The special classes and coaching groups in most schools are made up of children whose lack of accomplishment in reading has retarded their progress in other subjects. It is with these children from special classes who have a mental handicap as well as a reading difficulty that this study is concerned.

Many investigations and research studies have been carried on to determine the factors which influence learning and the defects which cause failure. There are numerous studies on environment, heredity, and physical defects in relation to school achievement and reading; but little has been done to determine the language skills of the mentally retarded.

The object of this study is to discover the relationship between various language skills of mentally retarded children. In the study of these relationships, it is essential to consider foreign language background, reading difficulties, mental and chronological age, and hearing comprehension. The purposes of the present investigation are:

1. To determine the effect of a foreign language background on hearing comprehension scores and on reading achievement scores.

2. To discover the frequency of special reading difficulties by determining the number of children who are reading below their mental age and the number whose reading achievement is below their hearing comprehension; and to discover the correlation between mental age and reading achievement and hearing comprehension and reading achievement.

3. To discover the extent to which the understanding of spoken language influences the child's reading achievement.

4. To determine whether there is a correlation between mental age and hearing comprehension or, if there is a marked relationship between the child's ability to understand spoken language and his mental ability.

Chapter I

CONTRIBUTIONS BY OTHERS

CONTRIBUTIONS BY OTHERS PERTINENT TO THE PROBLEM

There are few, if any, specific studies to determine the language skills of mentally retarded children, but studies have been made to discover the same relationships and effects of certain factors influencing reading with normal children. Some of these studies are included here, as the underlying principles in many instances are the same whether dull or average children are being studied.

Foreign Language Background.

Foreign language background has been taken into account by Inskeep, Pierce, and Terman.

While Inskeep is not reporting on the effect of a foreign background on reading, the observation she makes is pertinent to one of the factors being tested in this study. She states, "In teaching children whose reading is handicapped because a foreign language is spoken in the home, two things are necessary: 1. To enlarge the child's vocabulary; 2. To make correct pronunciation a matter of habit."[1]

This study is concerned with measuring the reading and hearing vocabulary of children with a foreign language handicap and the findings on these tests, which showed the English speaking group to be superior, indicate that this first requirement noted by Inskeep is most important.

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1. Annie Doman Inskeep, Teaching Dull and Retarded Children, p. 36.

The study by Pierce is on first grade reading, but the same would be true of any other grade or special class if the children's previous school training had not overcome the language difficulty. That foreign background is a determining factor in reading is shown in his article. He reports, "In foreign industrial communities such factors as late entrance, undesirable home conditions, defective health, language handicaps, and mental immaturity, render progress in learning to read a much more serious problem than it is in wealthy or average American districts."[1]

Terman in reporting on dull children singles out members from Spanish-Indian, Mexican and Negro, backgrounds and attributes their dullness to their race.[2] While no study has been made by Terman on the effect of a foreign background in relationship to learning to read, he predicts that when such a study is made there will be discovered enormously significant racial differences in general intelligence and ability to learn, differences which cannot be wiped out by any scheme of mental culture.

All of these studies, then, do name foreign language background as one of the difficulties which impede progress in reading and must be overcome whether the child is of average intelligence or dull.

Hearing Comprehension in Relation to Reading Achievement.

Young made a recent study to determine the relation of com-

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1. R. R. Pierce, "Administration of First Grade Reading in a Foreign Industrial Community", Elementary School Journal, June, 1932.
2. Lewis M. Terman, The Measurement of Intelligence, pp. 91, 92.

prehension and retention in reading to comprehension and retention in hearing.

He disagrees with Buswell, who claims that there is a plateau in the development of the eye motor habits in intermediate grades resulting in the arresting of reading development and causing hearing comprehension to progress more markedly than reading comprehension.[2]

Young maintains that children improve in their ability to comprehend through reading throughout the intermediate grades quite as fast, if not faster, than they improve in their ability to comprehend through hearing. "In general," he states, "children who do poorly in comprehending through reading do poorly in comprehending through hearing."[1]

The findings of his thesis would indicate that improvement in silent reading comprehension is seemingly more accelerated than improvement in hearing comprehension in the intermediate grades. The findings, too, justify somewhat the implication that in any case of reading disability the first step should be to ascertain the language difficulties of the case.

The data of this thesis by Young show that the relationship between reading comprehension and retention on the one hand, and hearing comprehension and retention on the other, is a very intimate and detailed one.

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1. W. E. Young, "Hearing Comprehension and Retention and Reading Achievement and Retention", Journal of Experimental Research, September, 1936.
2. G. T. Buswell, "Fundamental Reading Habits", Supplementary Educational Monographs, Number 21, p. 57, University of Chicago, 1922.

Mental Age in Relation to Reading Achievement.

Marion Monroe, in a study similar to the one carried on in this experiment to determine the relation between mental age and reading achievement, found that the reading-defect cases showed much greater discrepancies in reading with respect to mental age than did the control group with which she was working.[1] Their average discrepancies were from 2.2 to 2.9 years retardation below their mental age.

Most of the studies on mental age and reading are to determine the age when children are able to achieve and are made on children from the first grade.

While Harrison,[2] Betts,[3] Inskeep,[4] and Gates,[5] all set a mental age of six or six and one-half for achievement in reading, it is not yet proven that such a mental age is a proper minimum to prescribe for learning to read by all school methods and organizations, or all types of teaching. Many other factors such as the treatment of special difficulties, defects, amount of corrective work which has been done and must be done, all influence the age when children do start to achieve.

Florence W. Raguse reports that a mental age of five at the

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1. Marion Monroe, Children Who Cannot Read, pp. 8-10.
2. M. Lucille Harrison, Reading Readiness, p. 6, Houghton Mifflin Company, 1936.
3. Emmett Albert Betts, "Reading Disability Correlates", Education, p. 21, September, 1935.
4. Annie Dolman Inskeep, Teaching Dull and Retarded Children, p. 41.
5. Arthur I. Gates, The Improvement of Reading, p. 10.

beginning of the year, other things being satisfactory, is sufficient for learning to read in some instances.[1] She further reports that correlations between mental age and reading achievement were highest in the classes in which the best instruction was done and lowest in those in which the poorest instruction was provided.

It is impossible, then, to set any age and state that children of low mentality with a mental age of six or even eight will show marked achievement in reading, as what is true of the group tested in this study may not be true of a similar group of dull children.

The Effect of Age on Hearing Comprehension and Reading Achievement Scores.

To determine how each child's reading achievement compared with the achievement that should be expected from his age, Marion Monroe carried on an experiment much like the one on this study to discover the effect of age on hearing comprehension and reading achievement. In her study mental age was found to correlate with reading more highly than chronological age.

She states that, "Since reading has been considered as one of the measures of intelligence, the Stanford-Binet intelligence examination includes reading tests among its series of tests. A child then with a special reading defect, would necessarily be penalized on some of these tests."[2]

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1. Florence W. Raguse, "Qualitative and Quantitative Achievement in First Grade Reading", Teachers College Record, February, 1931.
2. Marion Monroe, Children Who Cannot Read, p. 10.

The Effect of Hearing Comprehension on Reading Achievement.

Inskeep states that "Practically all mentally retarded children enter school with but a limited background of well-comprehended experiences upon which they can draw. These children are usually not alert and are untouched mentally by what goes on around them. The direct consequence of this, as seen in the classroom, is the smallness of the vocabulary of which they can make correct use."[1]

Interpreting this to mean the child's understanding of the vocabulary of others as well as the stinted vocabulary which he himself possesses, we may well expect the child with the low hearing comprehension score to have a corresponding low reading achievement score.[2]

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1. Annie Dolman Inskeep, Teaching Dull and Retarded Children, p. 79.
2. W. E. Young, "Hearing Comprehension and Retention and Reading Comprehension and Retention", Journal of Experimental Education, September, 1936.

Chapter II

DESCRIPTION OF THE EXPERIMENT

DESCRIPTION OF EXPERIMENT

This experiment was carried on with children selected from the special classes of a large city school system. These children had been placed in special classes by the results they obtained on the Pintner-Cunningham Primary Mental Test,[1] the Metropolitan Readiness Test,[2] and the Kuhlmann-Anderson Tests.[3] All were tested on the Gates Primary Reading Tests[4] and Gates Silent Reading Tests[5] and on the Detroit Word Recognition Test.[6] The group placement of these children in the special classes was on the results which they made on the New Stanford Achievement Test[7] and the Waverly Test.[8]

The two hundred children tested were all mental defectives with intelligence quotients ranging from forty-one to eighty-two and with mental ages from six years and two months to ten years and eleven months. The chronological ages ran from nine years and six months to seventeen and eight months.

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1. Pintner-Cunningham Primary Mental Test, Form A. World Book Company, Yonkers-on-Hudson, New York, 1923.
2. Metropolitan Readiness Tests. World Book Company, Yonkers-on-Hudson, New York, 1933.
3. Kuhlmann-Anderson Tests. The Educational Test Bureau, University and Fifteenth Avenues, S.E., Minneapolis, Minnesota, 1927.
4. Gates Primary Reading Test, 1926.
5. Gates Silent Reading Test. Bureau of Publications, Teachers College, Columbia University, New York.
6. Detroit Word Recognition Test, Form A. World Book Company, Yonkers-on-Hudson, New York, 1928.
7. New Stanford Achievement Test, Form W. World Book Company, Yonkers-on-Hudson, New York, 1929.
8. School Test of the Waverley (Massachusetts) School for the Feeble-Minded.

Although the economic status of each child was not determined, about one-half came from rather mediocre homes in the industrial district of the city, while the other half lived in comfortable homes in the residential section and were of families of moderate income. Eighty-eight of the children tested were from foreign speaking homes. These facts relative to the group tested were determined from school records and questionnaires. A sample questionnaire is included in the appendix on page one.

The children selected for this study were tested by the Stanford Revision and Extension of the Binet-Simon Intelligence Test, Form L, and the Durrell-Sullivan Reading Capacity and Achievement Tests.

The Binet Scale is made up of problems which are designed primarily to test native intelligence and while it is a highly linguistic test, it is the best measure of intelligence available. A complete description of the test and instructions for administering it is outlined by Lewis M. Terman.[1] A copy of the test may be found in the appendix on page two.

Table one summarizes the preceeding information and results of the Binet Test relative to the group tested.

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1. Lewis M. Terman, The Measurement of Intelligence, Houghton Mifflin Company, Boston, 1916; Part I, pp. 36-64.

Table I

Summary of Preliminary Information Obtained Regarding Children Studied.

Children	Number of Cases	M.A.[1] Mean	C.A.[2] Mean	I.Q.[3] Mean	Language Background % English	% Foreign
Boys	137	106.55	163.75	65.55	63.5	36.5
Girls	63	102.1	165.45	62.05	39.68	60.32

1. Mental Age.
2. Chronological Age.
3. Intelligent Quotient.

The two hundred children were tested individually on the Binet Test. The time for administering each test varied from forty minutes to ninety minutes depending upon the individual being tested.

The Durrell-Sullivan Reading Capacity and Achievement Tests are new tests published in December, 1937. "The fundamental assumption of these tests is that serious reading debilities can be discovered by revealing discrepancies between the child's understanding of spoken language and his understanding of the printed word."

There are two parts to these tests. Part one is the hearing comprehension test. This test measures comprehension of spoken language and is composed of two sub-tests.

Test I. Word Meaning.

This test consists of seventy words which are tested by fourteen groups of pictures to measure the child's hearing vocabulary.

Test II. Paragraph Meaning.

The child demonstrates his understanding of the

paragraph read him by marking the number of the picture which illustrates the answer to the question asked him.

Part two is the Reading Achievement Test and, while it has four sub-tests, we are interested only in the first two:

Test I. Word Meaning.

This is a multiple choice test consisting of seventy-five items.

Test II. Reading Comprehension.

This test consists of twelve paragraphs to be read by the child, the comprehension of which is measured by five multiple choice questions which measure five different aspects of reading ability.

The Durrell-Sullivan tests have a reliability coefficient of .93 ± 1.9 on the Hearing Vocabulary Test, .90 ± 2 on the Paragraph Meaning Test, .97 ± 1.7 on the Word Meaning Test of the reading achievement test, and .94 ± 1.8 on the Paragraph Meaning of that same test.

Twenty children were tested at one time on the Durrell-Sullivan tests which are group tests. Test one on hearing vocabulary and hearing comprehension was given at the first testing. The tests on word meaning and reading comprehension were given at a later testing to guard against fatigue.

From the data obtained on the foregoing tests, several investigations of comparison were made. The first study was concerned with the effect of foreign speech in the home on several factors in language achievement. The English-speaking and foreign-speaking

children were paired for chronological age and mental age. The following language factors were then studied:

1. Differences in the understanding of spoken vocabulary as determined by the Durrell-Sullivan Reading Achievement Test.

2. Differences in the understanding of paragraphs graded in difficulty as presented in the same test.

3. Differences between the two groups in combined scores on hearing capacity and achievement tests.

4. Differences between the two groups in reading vocabulary on the Durrell-Sullivan Achievement Test.

5. Differences between the two groups in reading paragraphs.

6. Differences between the two groups in total reading achievement, combining the above tests.

A second study made from these data was the determination of the frequency and extent of reading difficulties among the group. It was assumed that a child had a reading difficulty if his reading achievement grade score was one full grade or more below his hearing comprehension grade score. This study was to determine the number of children who were retarded one year or more in reading as judged by hearing comprehension as compared with the number of children who have reading disability when the mental age was used as the criterion for reading accomplishment. A comparison of reading accomplishment scores was also made, first by using the mental age as a basis, and then by using the hearing comprehension as a basis.

To study the effect of age on the hearing comprehension test

scores, the cases were again paired for mental age, sex, and English in the home. This study was to determine whether two children who had the same mental age would have markedly different hearing comprehension scores if one had a higher chronological age than the other. One group was equal to the other in mental age, sex, and English-speaking experience, but the first group consisted of children with high chronological ages while the second group consisted of children of low chronological ages. On the basis of this pairing, the difference between the means of the two groups was determined for the same factors of the Durrell-Sullivan tests in a manner similar to that outlined in the first study. The six factors were studied separately, and the differences between the means and probable errors of the differences were determined.

Cases were likewise paired to study the effect of hearing comprehension on reading achievement. Children were paired for chronological age, mental age, sex, and language background. A child with a high hearing comprehension score was paired with one who had a similar chronological age and mental age but who had a low hearing comprehension score. When these pairings were made, the differences in the means of the two groups on the reading age of the two tests combined and on each test separately were studied.

Lastly, the correlation between mental age and hearing comprehension, including hearing vocabulary and hearing paragraphs was studied. The purpose of this study was to determine whether or not there was a correlation between mental age and hearing comprehension;

whether children of higher mental ages did have higher hearing comprehension scores than those with lower mental ages. The two hundred cases were all included in this study.

Chapter III

INTERPRETATION OF RESULTS

INTERPRETATION OF RESULTS

Seventy-seven pairs of children were studied to determine the effect of English in the home on hearing comprehension and on reading achievement. Table I in the Appendix shows this pairing as well as the results from the Binet and Durrell-Sullivan Tests on each child.

Table II below shows the difference between the two groups in the understanding of spoken vocabulary as determined by the Durrell-Sullivan Reading Capacity Test.

Table II

Effect of Foreign Language in the Home on Hearing Vocabulary, Age and Mental Age Held Constant

	Mean Hearing Vocabulary Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English-speaking	45.99	.946	3.18	1.319	2.41
Foreign-speaking	42.81	.918			

1. Probable Error of the Difference.

These mean scores are equivalent to ages of eleven years and one month and ten years and eight months for the English speaking and Foreign speaking groups respectively.

Table III below shows the difference between the two groups in the understanding of spoken paragraphs as determined by the Durrell-Sullivan Reading Capacity Test.

Table III

Effect of Foreign Language in the Home on Hearing Paragraphs, Age and Mental Age Held Constant

	Mean Hearing Paragraph Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English-speaking	32.81	.959	2.02	1.26	1.6
Foreign-speaking	30.79	.819			

1. Probable Error of the Difference.

These mean scores are equivalent to ages of ten years and nine years and nine months for the English speaking and Foreign speaking groups respectively.

Table IV below shows the difference between the two groups in the understanding of spoken English when the scores of the two Hearing Comprehension Tests are combined as determined by the Durrell-Sullivan Reading Capacity Test.

Table IV

Effect of Foreign Language in the Home on Hearing Comprehension, Age and Mental Age Held Constant

	Mean Hearing Comprehension Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English-speaking	39.56	.857	3.57	1.18	3.03
Foreign-speaking	35.99	.817			

1. Probable Error of the Difference.

These mean scores are equivalent to age scores of ten years and nine months and ten years and four months for the English and

Foreign speaking groups respectively.

Table V shows the difference between the two groups in the understanding of vocabulary read as determined by the Durrell-Sullivan Achievement Test.

Table V

Effect of Foreign Language in the Home upon Reading Vocabulary Age and Mental Age Held Constant

	Mean Reading Vocabulary Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English speaking	22.08	1.05	2.58	1.48	1.74
Foreign speaking	19.49	1.04			

1. Probable Error of the Difference.

These mean scores are equivalent to age scores of eight years and eleven months and eight years-eight months for the English and Foreign speaking groups respectively.

Table VI shows the difference between the two groups in the understanding of paragraphs read as determined by the Durrell-Sullivan Reading Achievement Tests.

Table VI

Effect of Foreign Language in the Home upon Reading Paragraphs Age and Mental Age Held Constant

	Mean Reading Paragraphs Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English speaking	12.81	.596	1.50	.784	1.91
Foreign speaking	11.31	.510			

1. Probable Error of the Difference.

These mean scores are equivalent to age scores of eight years and ten months and eight years and eight months for the English speaking and Foreign speaking groups respectively.

Table VII shows the difference between the two groups in reading achievement as determined by the Durrell-Sullivan Reading Achievement Test.

Table VII

Effect of Foreign Language in the Home upon Reading Achievement
Age and Mental Age Held Constant

	Mean Reading Achievement Test I and II Score	Probable Error of the Mean	Difference $M_1 - M_2$	Probable Error of the Difference	Difference / P.E.D.[1]
English speaking	17.68	.821	2.41	1.08	2.23
Foreign speaking	15.27	.705			

1. Probable Error of the Difference.

These mean scores are equivalent to age scores of seven years and eleven months and seven years and ten months for the English speaking and Foreign speaking groups respectively.

It is apparent when chronological and mental ages are held constant by the techniques of paired groups that foreign language in the home affects the child's hearing comprehension adversely. The differences between the two groups on both hearing comprehension tests fall just short of statistical significance. The reading achievement was affected by foreign language in the home in a similar manner, the differences between the foreign-speaking and English-speaking groups not being statistically significant, however.

While these differences are smaller than one might expect,

it must be remembered that in pairing by Stanford-Binet Mental Age the groups are already equated to a large degree for the comprehension of spoken language. The Stanford-Binet Test itself is essentially a test of language comprehension.

Frequency of Reading Difficulties among Pupils in Ungraded Classes.

The second study from the data obtained is the discovery of the frequency of reading difficulties among ungraded classes. This was measured in two ways: first, by the use of the mental age as a measure of reading capacity; and second, by the Durrell-Sullivan Hearing Comprehension Test used in a similar manner. To determine the frequency of retardation as compared to mental age the reading age was subtracted from the mental age. Table VIII below shows the number of children who were reading above mental age and below mental age.

Table VIII

Comparison of Reading Ages with Stanford-Binet Mental Ages

	Number	R.A.[1] 2 or more yrs. above M.A.[2]	R.A. 1-2 yrs. above M.A.	R.A. within 1 yr. of M.A.	R.A. 1-2 yrs. below M.A.	R.A. 2 or more yrs. below M.A.
Boys	137	6	20	92	14	4
Girls	63	2	11	39	9	2

1. Reading Age.
2. Mental Age.

Twenty-nine of the two hundred children in these ungraded classes are found to have reading disabilities when the criterion of one year below mental age is used. Eighteen of these were boys and eleven were girls.

To determine the frequency of retardation as compared to hearing comprehension the reading age was subtracted from the hearing comprehension age score. Table IX below shows the number of children whose reading achievement score was greater than their hearing comprehension score.

Table IX

Comparison of Reading Ages with Hearing Comprehension Age Scores

	Number	R.A.[1] 2 or more yrs. above H.C.[2]	R.A. 1-2 yrs. above H.C.	R.A. within 1 yr. of H.C.	R.A. 1-2 yrs. below H.C.	R.A. 2 or more yrs. below H.C.
Boys	137	0	1	24	40	72
Girls	63	0	2	24	22	15

1. Reading Age.
2. Hearing Comprehension.

One hundred and forty-nine of the two hundred children in these ungraded classes are found to have reading disabilities when the criterion of one year below hearing comprehension is used. One hundred and twelve of these were boys and thirty-seven were girls.

The Effect of Hearing Comprehension on Reading Achievement.

The purpose of this study was to discover the effect of hearing comprehension on reading achievement when the factor of chronological age, mental age, sex, and language background are held constant. In pairing for chronological age and mental age, a difference of less than six months in score was allowed. In each pair the child with high hearing comprehension was superior to his mate by at least thirty points of raw score on the hearing comprehension test. Only thirty-seven pairs of children were found who passed

the above conditions satisfactorily. Table III in the appendix shows this pairing. The accuracy of the pairing is indicated by the means for each of the two groups in mental and chronological age. The mean mental age in months for the high hearing comprehension group was 106.1±1.003 as compared to 105.5±1.12 for the low hearing comprehension group. The chronological age means were 163.7±1.52, and 163.8±1.43 for the high and low groups respectively.

Table X

Reading Achievement in Relation to Hearing Comprehension.
Mental Age, Chronological Age,
Language Background, and Sex, Held Constant.

	Reading Score Mean	Probable Error of the Mean	Difference	Probable Error of the Difference	Difference / P.E.D.[1]
High Hearing Comprehension	39.8	2.63	12.6	3.25	3.86
Low Hearing Comprehension	27.2	1.91			

1. Probable Error of the Difference.

This shows a statistically significant difference in reading achievement in favor of the high hearing comprehension group, in spite of the fact that mental age and other factors were held constant.

Tables XI and XII below show these reading achievement differences separated into the results from the reading vocabulary and the reading paragraph tests.

Table XI

Reading Vocabulary Achievement Differences

	Vocabulary Score Mean	Probable Error of the Mean	Difference	Probable Error of the Difference	Difference / P.E.D.[1]
High Hearing Comprehension	25.9	1.66	8.7	2.17	4.01
Low Hearing Comprehension	17.2	1.4			

1. Probable Error of the Difference.

Table XII

Reading Paragraph Achievement Differences

	Paragraph Score Mean	Probable Error of the Mean	Difference	Probable Error of the Difference	Difference / P.E.D.[1]
High Hearing Comprehension	14.5	1.16	3.55	1.43	2.48
Low Hearing Comprehension	11.0	.83			

1. Probable Error of the Difference.

Correlation of Reading Achievement Scores with Mental Age and Hearing Comprehension.

Two correlations were run to determine further, the relationship between mental age and reading achievement and hearing comprehension and hearing comprehension and reading achievement. The results of these correlations are shown on table XIII.

Table XIII

Comparison of Reading Achievement Scores with Mental Age and Hearing Comprehension

	Number	r	Probable Error of the r	Probable Error of the Difference r-1 r-2
Mental Age versus Reading Achievement	200	.56	±.0325	±.0458
Hearing Comprehension versus Reading Achievement	200	.58	±.0317	

The coefficient of correlation between mental age and reading achievement was .56 ± .033. The coefficient of correlation between hearing comprehension and reading achievement was .58 ± .032. These correlations were found by the products-moments method.

Correlation between Mental Age and Hearing Comprehension.

The last study was to determine the correlation, if any, between mental age and hearing comprehension. A correlation was run for each of the hearing comprehension tests and for the two combined. The two hundred cases were included in this study.

Table XIV shows the results of the correlations, their probable errors, and the probable error of the difference between the

correlations for the two parts of the hearing comprehension test.

Table XIV

Correlation Between Mental Age and Hearing Comprehension.

	Number	r	Probable Error of r	Probable Error of the Difference
Mental Age versus Hearing Vocabulary	200	.46	±.0376	±.0539
Mental Age versus Hearing Paragraphs	200	.45	±.0387	
Mental Age versus Hearing Vocabulary and Hearing Paragraphs	200	.55	±.0333	

The coefficient of correlation for mental age versus hearing vocabulary was .46 ± .0376; for mental age versus hearing paragraphs .45 ± .0387; and on the two tests combined, .55 ± .0333.

Chapter IV

SUMMARY AND CONCLUSIONS

SUMMARY AND CONCLUSIONS

The purpose of this study was to find certain relationships between the various language abilities among children in ungraded classes. Two hundred children in ungraded classes in Lynn, Massachusetts, were given the Form L of the Stanford Revision of the Binet-Simon Test, a test of hearing comprehension, and a reading achievement test. The last two mentioned tests were included in the Durrell-Sullivan Reading Capacity and Achievement Test. From the data obtained the following conclusions and observations were drawn.

1. Foreign language in the home affects the child's understanding of spoken English to a statistically significant degree. It should be noted that the differences between the English-speaking and foreign groups would probably have been much greater had not the two groups been equated by the Stanford-Binet Test which in itself is largely a measure of language comprehension.

2. When the hearing comprehension scores were divided into vocabulary and paragraph comprehension scores the differences between the two groups on each of these tests failed to show statistical significance. The differences between the scores was somewhat greater for vocabulary than for paragraphs.

3. Although the groups were equated for Stanford-Binet mental age the effect of foreign language in the home upon reading was shown to be unfavorable. In both vocabulary and paragraph tests

the English-speaking group was superior but on neither test nor on the combined tests were the differences statistically significant.

4. When the criterion of reading disability was assumed to be reading age one year or more below Stanford-Binet mental age, 14.5% of the children showed such retardation.

5. When the criterion of reading disability was assumed to be one year or more below hearing comprehension, 74.5% of these children showed reading disability.

6. When groups were paired for mental age and other factors, but were different in hearing comprehension, the group with the high hearing comprehension showed a significantly higher score on reading achievement than did the low hearing comprehension group. This was true for both the reading vocabulary and the reading paragraph test.

7. The correlation between mental age and reading achievement among these ungraded classes was $.57 \pm .03$ while the correlation between hearing comprehension and reading achievement was $.58 \pm .03$.

8. The correlation between mental age and hearing comprehension scores was $.55 \pm .03$ while the correlation between mental age and hearing vocabulary was $.46 \pm .04$ and between mental age and hearing paragraphs $.45 \pm .04$.

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Stanford Revision of Binet-Simon Test, Form L. Houghton Mifflin Company, Boston.

Table I

COMPARISON OF SCORES
OF ENGLISH AND FOREIGN SPEAKING CHILDREN

	ENGLISH						FOREIGN					
PAIRS	C.A.[1]	M.A.[2]	READING SCORES[3]				C.A.	M.A.	READING SCORES			
			I	II	III	IV			I	II	III	IV
1	9:8	7:2	15	17	3	8	9:6	7:4	18	18	12	2
2	10:1	7	42	10	8	3	10:1	7:5	33	14	4	7
3	10:11	7	44	24	14	9	10:6	7	19	11	0	3
4	11	7:10	37	9	2	0	11:6	7:10	38	36	17	14
5	11:5	9:2	55	29	19	14	11:5	9:3	42	22	2	3
6	11:6	8:3	40	10	8	12	11:9	7:11	21	11	2	7
7	11:8	7:9	46	28	10	9	11:9	7:8	32	28	19	9
8	11:10	8:6	50	25	34	18	12	8:1	41	11	7	14
9	11:11	8:11	34	31	16	13	12:4	8:11	49	27	9	4
10	12	9:5	45	45	34	35	12:2	9:5	46	36	27	6
11	12:2	7:11	45	15	14	11	12	8	58	31	14	7
12	12:3	8:2	61	39	47	16	12:7	8:6	42	30	26	9
13	12:5	8:10	55	42	28	10	12:4	8:10	43	21	15	3
14	12:6	9:3	55	49	49	26	12:4	9	53	38	23	16
15	12:6	7:6	49	32	15	10	12:9	7:4	22	18	5	4
16	12:6	6:8	59	37	17	4	12	6:2	22	24	0	3
17	12:7	8:10	51	35	32	11	12:4	8:10	48	32	10	3
18	12:7	7:11	40	21	6	4	12:6	8:3	42	34	16	11
19	12:7	8:9	47	32	17	11	12:7	8:4	62	36	5	1
20	12:8	8:6	35	32	35	17	12:6	8:8	62	47	44	17
21	12:8	7:10	38	27	11	9	12:9	7:4	27	10	2	3
22	12:9	9:4	44	25	14	14	12:8	9:4	43	45	25	23
23	12:9	8:9	34	27	16	11	12:8	8:9	52	46	28	19
24	12:9	7:11	23	8	6	8	12:10	8:1	51	28	15	12
25	12:11	6:10	46	28	2	3	12:7	6:10	38	22	10	5
26	12:11	9	46	35	40	17	12:10	9:1	47	36	49	21
27	13	9:8	60	45	39	14	13	9:8	40	36	19	19
28	13	9:10	47	42	38	19	13	9:9	69	49	25	7
29	13	9:5	54	30	28	9	13:5	9:6	59	47	24	17
30	13:1	9:1	47	41	38	20	13	9:1	24	30	13	6
31	13:1	8:1	40	20	20	5	13:2	7:11	29	17	6	9
32	13:1	8:2	35	10	4	10	13:5	7:9	31	17	9	6
33	13:2	8:11	47	45	32	37	13:4	8:10	48	36	38	20

1. Chronological Age.
2. Mental Age.
3. Reading Scores: I. Hearing Vocabulary Test.
II. Hearing Paragraph Test.
III. Reading Vocabulary Test.
IV. Reading Paragraph Test.

Table I (continued)

COMPARISON OF SCORES
OF ENGLISH AND FOREIGN SPEAKING CHILDREN

	ENGLISH						FOREIGN					
PAIRS	C.A.	M.A.	READING SCORES				C.A.	M.A.	READING SCORES			
			I	II	III	IV			I	II	III	IV
34	13:2	9:3	50	40	9	8	13:3	9:3	41	38	45	20
35	13:3	10	57	51	11	10	13:5	10:1	38	34	28	10
36	13:3	6:6	19	9	4	6	13:9	7	12	22	4	8
37	13:3	8:7	51	23	9	3	13:9	8:11	55	49	24	18
38	13:4	7:3	25	25	13	9	13:4	7:9	27	27	16	16
39	13:5	9:3	41	26	4	5	13:7	9:4	54	47	26	18
40	13:6	8:6	43	27	18	0	13:8	8:6	39	23	24	12
41	13:9	8:8	50	48	40	13	13:5	8:8	27	24	7	3
42	13:9	9:6	54	47	26	18	13:11	9:7	51	35	18	8
43	13:9	9:8	60	48	17	15	14:2	9:2	43	35	19	14
44	13:10	9:9	61	41	29	21	13:11	9:10	38	34	27	6
45	13:10	9:3	52	42	13	4	14	9	42	36	26	14
46	13:10	9:6	64	61	48	35	14:1	9:2	50	41	57	9
47	13:11	8:7	54	31	18	9	13:10	8:8	36	39	35	20
48	14	8	48	21	21	11	14	8	41	39	16	4
49	14	9:1	49	24	47	16	14	9:1	49	44	27	13
50	14:1	8:2	41	26	2	0	14:1	8:4	50	14	4	6
51	14:1	8:11	63	27	21	17	14	8:11	48	18	3	9
52	14:1	9:7	61	51	37	15	14:4	9:9	47	43	33	27
53	14:1	8:7	48	23	15	9	14:2	8:5	27	31	16	15
54	14:2	9:7	58	46	5	0	14:4	9:9	42	41	41	23
55	14:4	7	20	26	20	16	14	7:2	28	12	9	3
56	14:5	9:1	52	41	9	20	14:4	9	28	27	13	16
57	14:5	9:4	19	21	19	0	14:4	9:3	40	35	17	21
58	14:6	8:8	40	40	32	26	14:5	8:8	39	25	12	6
59	14:7	9:9	65	50	58	26	14:7	9:10	43	30	40	18
60	14:7	9:2	50	30	24	11	14:7	9:4	31	33	1	0
61	14:9	9:5	54	49	17	16	14:9	9:4	49	36	26	10
62	14:9	8:11	40	43	30	23	14:5	8:11	21	21	43	6
63	14:9	9:9	48	35	30	19	14:10	9:6	47	29	26	17
64	14:10	7:8	8	18	2	0	14:9	7:4	58	32	14	9
65	14:10	9:1	52	31	25	14	14:7	9:3	36	26	7	9
66	14:11	9:4	50	40	44	20	14:6	9:4	53	37	44	18
67	14:11	8:5	49	41	25	7	14:9	8:2	42	21	17	5
68	15:2	8:11	47	30	14	14	15:1	8:11	31	33	11	11
69	15:3	8:6	32	29	10	6	15:1	8:9	43	26	29	20
70	15:3	9:3	58	47	29	20	15:4	8:10	42	29	53	28
71	15:4	9:6	49	50	39	17	15:1	9:6	22	31	8	6
72	15:4	9:8	43	35	24	12	15:4	9:10	39	35	32	16

Table I (continued)

COMPARISON OF SCORES
OF ENGLISH AND FOREIGN SPEAKING CHILDREN

	ENGLISH						FOREIGN					
PAIRS	C.A.	M.A.	READING SCORES				C.A.	M.A.	READING SCORES			
			I	II	III	IV			I	II	III	IV
73	15:5	8:11	49	43	36	19	15	9:4	55	30	4	2
74	15:6	10	66	50	45	18	15:6	9:7	48	48	39	22
75	15:9	9:1	60	52	43	14	15:10	8:10	61	45	7	8
76	16:3	9	50	25	25	10	16:3	9	58	44	20	18
77	16:7	7:7	47	24	12	7	16:2	7:9	36	11	8	6

Table II

FREQUENCY OF READING DIFFICULTY

CASE	C.A.[1]	M.A.[2]	HEARING COMPREHENSION	READING ACHIEVEMENT	M.A. BELOW R.A.[3]	M.A. ABOVE R.A.	H.C.[4] BELOW R.A.	H.C. ABOVE R.A.	SEX
1	14.4	9.3	10.7	9.1		.2		1.6	G
2	14	9.1	12.1	9.3	.2			2.10	G
3	14.5	8.8	9.9	7.11		.9		1.10	G
4	13	9.1	9.1	8		1.1		1.1	G
5	11.6	7.10	10.5	8.8	.10			1.9	G
6	13.5	10.1	10.4	9.1		1		1.3	G
7	13.11	9.10	10.4	8.9		1.1		1.7	G
8	12.5	7.8	10.5	7.8	.0	.0		2.9	G
9	13.9	7.8	9.5	7.10	.2			1.7	G
10	13.2	10.2	15	9.8		.6		5.4	G
11	14.2	9.7	13.1	7.2		2.5		5.11	G
12	15.4	9.6	9	7.8		1.10		1.4	G
13	13.4	8.4	15	11.7	3.3			3.5	G
14	10.11	7	9.11	8.3	1.3			1.8	G
15	14.11	10	11	9.3		.9		1.9	G
16	12.7	9.1	12.4	8.11		.2		3.5	G
17	15.3	8.6	9.7	7.10		.8		1.9	G
18	12.6	7.6	11	8.4		.10		2.8	G
19	13.1	8.1	10.5	8.4	.3			2.1	G
20	12.7	8.6	10.4	8.11	.5			1.5	G
21	14.11	7.2	9.4	8.2	1.			1.2	G
22	15.8	8.7	12.7	9.7	1.			3	G
23	15.1	8.11	9.9	8.2		.9		1.7	G
24	14.5	7.9	8.4	7.2		.7		1.2	G
25	14	8	10.11	8	.0	.0		2.11	G
26	14.9	7.4	11.9	8.3	.11			3.6	G
27	12.8	8.9	12.7	9.8	.11			2.11	G
28	12.11	6.10	10.5	7.2	.4			3.3	G
29	13.5	8.8	8.9	7.6		1.2		1.3	G
30	14.7	9.3	9.8	7.10		1.5		1.10	G
31	10.1	7.5	8.8	7.6	.1			1.2	G
32	16.8	9.3	14.1	8.2		1.1		5.11	G
33	14.10	9.6	10.7	9.5		.1		1.2	G
34	15.1	9.6	9	7.8		1.10		1.4	G
35	14.1	8.4	9.9	7.6		.10		2.3	G
36	12.8	8.6	10	10	1.6		.0	.0	G
37	13	8.11	8.9	9.9	.10		1		G
38	13.1	8.2	8.7	7.8		.6		.11	G
39	13.2	8.11	12	11		2.1		1	G
40	14	9.1	10.4	10.8	1.7				G

1. Chronological Age.
2. Mental Age
3. Reading Achievement.
4. Hearing Comprehension.

Table II (continued)

FREQUENCY OF READING DIFFICULTY

CASE	C.A.	M.A.	HEARING COMPREHENSION	READING ACHIEVEMENT	M.A. BELOW R.A.	M.A. ABOVE R.A.	H.C. BELOW R.A.	H.C. ABOVE R.A.	SEX
41	15.8	10.11	11.4	10.8		.3		.8	G
42	13.3	6.6	7.6	7.6	1		.0	.0	G
43	16.4	6.8	8	7.3	.7			.9	G
44	11.9	7.8	9.5	8.7	.11			.10	G
45	14.4	8.9	9.5	8.7		.2		.10	G
46	14.2	8.5	9.4	8.8	.3			.8	G
47	10.6	7	7.7	6		1.		1.7	G
48	13.8	8.6	9.8	9	.6			.8	G
49	13.9	7	7.10	7.7	.7			.3	G
50	12.9	7.4	8	7.2		.2		.10	G
51	13.3	9.3	10.9	10.9	1.6		.0	.0	G
52	14.4	9.9	11.1	11.	1.3			.1	G
53	14.6	8.5	9.5	9.7	1.2		.2		G
54	14.4	9	9.3	8.7		.5		.8	G
55	14	7.2	8.3	7.7		.5		.8	G
56	13.10	8.8	10.7	10.1	1.5			.6	G
57	13.4	7.3	8.9	8.2	.11			.7	G
58	14.4	7	8.7	9	2		.5		G
59	12.11	9	11	10.4	1.4			.8	G
60	15.3	9.10	10.7	10	.2			.7	G
61	14.2	10.3	10.1	10.5	.2		.4		G
62	14.5	8.11	8.4	9.9	.10		1.5		G
63	15.7	8.2	7.10	7.6		.8		.4	G
64	14.6	8.8	10.11	10.4	1.8			.7	B
65	14.10	7.8	7.5	6		1.8		1.5	B
66	14.11	9.4	11.9	10.9	1.5			1.0	B
67	16.2	7.9	8.8	7.8		.1		1	B
68	13.10	9.6	15.1	12.	2.6			3.1	B
69	14.3	10.4	10	10.5	.1		.5		B
70	13.4	8.10	11.3	10.4	1.6			.11	B
71	15.4	9.10	10.5	9.9		.1		.8	B
72	15.4	8.10	10.3	11.10	3		1.7		B
73	15.1	8.9	10.1	9.9	1			.4	B
74	14.5	9.4	8.3	8		1.4		.3	B
75	14.7	9.10	10.4	10.4	.6		.0	.0	B
76	14.1	9.2	11.10	10.11	1.9			.11	B
77	14.1	7.6	9	8.2	.8			.10	B
78	13	9.7	9.3	8.11		.8		.4	B
79	13.2	7.11	8.7	7.10		.1		.9	B
80	12.9	7.11	7.8	7.8		.3	.0	.0	B
81	11.6	8.3	8.9	8		.3		.9	B
82	11.9	7.11	7.8	7.5		.7		.3	B

Table II (continued)

FREQUENCY OF READING DIFFICULTY

CASE	C.A.	M.A.	HEARING COMPREHENSION	READING ACHIEVEMENT	M.A. BELOW R.A.	M.A. ABOVE R.A.	H.C. BELOW R.A.	H.C. ABOVE R.A.	SEX
83	13	9.9	15.1	8.9		1.		6.4	B
84	16.3	9	10.7	8.11		.1		1.8	B
85	15.1	10.	11.3	9.7		.5		1.8	B
86	15.2	8.11	10.8	8.7		.4		2.1	B
87	15.4	9.8	10.9	9		.8		1.9	B
88	15.8	9.3	12.9	7.3		2.		5.6	B
89	15.10	8.10	13.4	7.10		1.		5.6	B
90	15	9.4	11.4	7.3		2.1		4.1	B
91	15.7	8.2	13	8		.2		5	B
92	14.1	9.7	13.10	10	.5			3.10	B
93	15.6	9.7	12.4	10.7	1			1.9	B
94	15.5	8.11	12.	10.1	1.2			1.11	B
95	15.4	9.6	12.8	10.3	.9			2.5	B
96	15.10	9.7	12.3	9.9	.2			2.6	B
97	15.1	9.6	13.6	10.	.6			3.6	B
98	15.1	9.9	12.7	11.5				1.8	B
99	15.3	9.3	13.2	9.9	.6			3.5	B
100	12.6	8.8	13.7	10.7	1.11			3	B
101	12.6	8.3	10.7	8.6	.3			2.1	B
102	12.4	9	11.10	9.3	.3			2.7	B
103	12.7	8.10	11.4	9.5	.7			1.11	B
104	12.2	7.11	9.5	8.4	.5			1.1	B
105	12.6	9.11	12.2	10.11	1			1.3	B
106	12.6	9.4	11.7	9.11	.7			1.8	B
107	12.4	9.8	11.9	9.11	.3			1.10	B
108	12.8	7.10	9.9	8	.2			1.9	B
109	12.6	6.8	12.4	8.2	1.6			4.2	B
110	12.6	9.3	13.1	11.5	2.2			1.8	B
111	12.5	8.10	12.6	9.1	.3			3.5	B
112	12.3	8.2	9.11	8.6	.4			1.5	B
113	12	8	11.8	8.2	.2			3.6	B
114	12.10	8.1	10.9	8.6	.5			2.3	B
115	12.8	9.4	11.7	9.9	.5			1.10	B
116	12.7	6.10	9.5	7.10	1.			1.7	B
117	11.8	7.9	10.5	8	.3			2.5	B
118	10.1	7	9	7.6	.6			1.6	B
119	11.1	7.8	10.3	7.10	.2			2.5	B
120	11.7	9.6	12.1	9.11	.5			2.2	B
121	14.9	10.2	11.9	9.9		.3		2.	B
122	14.9	9.5	13	8.9		.8		4.3	B
123	14.10	10	12.6	9.4		.8		3.2	B

Table II (continued)

FREQUENCY OF READING DIFFICULTY

CASE	C.A.	M.A.	HEARING COMPREHENSION	READING ACHIEVEMENT	M.A. BELOW R.A.	M.A. ABOVE R.A.	H.C. BELOW R.A.	H.C. ABOVE R.A.	SEX
124	14.5	9.1	12.1	8.7		.6		3.6	B
125	14.1	8.7	10.3	8.3		.4		2.	B
126	14.7	9.2	10.11	8.11		.3		2.	B
127	14.5	10.4	11.	9.9		.7		1.3	B
128	13.9	9.8	13.6	8.9		.11		4.9	B
129	13.3	10.	13.6	8.2		1.10		5.4	B
130	13.9	10.1	11.5	9.3		.10		2.2	B
131	13.3	8.7	10.5	7.7		1.		2.10	B
132	13.9	9.6	12.10	9.5		.1		3.5	B
133	13.	9.8	10.7	9.1		.7		1.6	B
134	13.5	9.6	13.4	9.4		.2		4.	B
135	13.11	9.7	11.4	8.6		1.1		2.10	B
136	14	8.11	9.11	7.7		1.4		2.4	B
137	14.9	9.4	11.4	9		.4		2.4	B
138	16.3	9.10	13.1	11.9	1.11			1.4	B
139	16.7	7.7	10.3	8	.5			2.3	B
140	17.8	8.8	12.7	9.1	.5			3.6	B
141	16.11	10.2	15.1	11.10	1.8			3.3	B
142	15.6	10	15.1	10.8	.8			4.5	B
143	14.7	9.9	15.1	12.1	2.4			3	B
144	9.6	7.4	7.11	7.8	.4			.3	B
145	9.8	7.2	7.8	7.6	.4			.2	B
146	11.10	8.6	10.7	10.	1.6			.7	B
147	11.6	7.4	8.7	7.10	.6			.9	B
148	12.10	9.1	11.1	11.1	2.		.0	.0	B
149	12.9	7.4	8.3	7.5	.1			.10	B
150	12	8.1	9.	8.2	.1			.10	B
151	12	9.5	11.9	11.	1.7			.9	B
152	13.4	7.9	9.1	8.9	1.			.4	B
153	13.5	7.9	8.8	7.10	.1			.10	B
154	14.1	8.11	11.9	9.1	.2			2.8	B
155	14.9	9.9	11.1	9.9	.0	.0		1.4	B
156	14	8	10.1	8.9	.9			1.4	B
157	14.11	8.5	11.9	8.9	.4			3	B
158	14.9	8.11	11.1	10.	1.1			1.1	B
159	14.10	9.1	11.1	9.3	.2			1.10	B
160	14.8	8.2	10.1	8.3	.1			1.10	B
161	14.9	8.2	9.8	8.2	.0	.0		1.6	B
162	12	6.2	8.7	7	.10			1.7	B
163	12.3	8.2	12.9	10.8	2.6			2.1	B

Table II (continued)

FREQUENCY OF READING DIFFICULTY

CASE	C.A.	M.A.	HEARING COMPREHENSION	READING ACHIEVEMENT	M.A. ABOVE R.A.	M.A. BELOW R.A.	H.C. ABOVE R.A.	H.C. BELOW R.A.	SEX
164	13.7	9.4	12.10	9.5	.1			3.5	B
165	13.9	8.11	13.1	9.4	.5			3.9	B
166	13	9.8	13.2	10.	.4			3.2	B
167	13.1	9.1	11.7	10.4	1.3			1.3	B
168	13	9.10	11.8	10.4	.6			1.4	B
169	14.4	9.9	11.9	10.5	.8			1.4	B
170	14.6	9.4	11.9	10.7	1.3			1.2	B
171	14	9	10.9	9.3	.3			1.6	B
172	13.9	8.8	12.7	10.	1.4			2.7	B
173	13.10	9.9	12.11	9.11	.2			3.	B
174	15.9	9.1	13.10	10.4	1.3			3.6	B
175	16.3	9.	12.11	9.1	.1			3.10	B
176	14.1	8.2	10.	6.		2.2		4.	B
177	12.4	8.10	9.9	7.11		.11		1.10	B
178	12.7	8.4	12.7	7.3		1.1		5.4	B
179	13.11	8.7	11.4	8.6		.1		2.10	B
180	13.1	8.7	10.5	8		.7		2.5	B
181	13	9.5	11.3	9.1		.4		2.2	B
182	13.2	9.3	11.9	7.11		1.4		3.10	B
183	13.10	7.9	10.9	7		.9		3.9	B
184	13.6	8.6	10.1	7.11		.7		2.2	B
185	13.10	9.3	12.2	7.11		1.4		4.3	B
186	13.5	9.3	10.	7.5		1.10		2.7	B
187	14.7	9.4	9.9	7		2.4		2.9	B
188	14.2	9.2	10.9	8.9		.5		2.	B
189	11.5	9.3	9.9	7.2		2.1		2.7	B
190	11.5	9.2	11.3	8.9		.5		2.6	B
191	11.11	8.11	9.9	8.7		.4		1.2	B
192	11	7.10	8.7	7		.10		1.7	B
193	12.4	8.10	10.11	7.8		1.2		3.3	B
194	12.4	8.11	10.7	7.8		1.3		2.11	B
195	12.2	9.5	11	8.9		.8		2.3	B
196	12.7	7.11	9.7	7.6		.5		2.1	B
197	12.9	9.4	10.1	8.7		.9		1.6	B
198	12.3	9.4	13.4	8.7		.9		4.9	B
199	12.9	8.9	9.8	8.6		.3		1.1	B
200	12.7	8.9	10.9	8.7		.2		2.2	B

Table III

COMPARISON OF HIGH AND LOW HEARING COMPREHENSION SCORES
IN RELATION TO READING ACHIEVEMENT

	HIGH HEARING COMPREHENSION SCORES					LOW HEARING COMPREHENSION SCORES				
PAIRS	M.A.	C.A.	HEARING COMPREHENSION	READING SCORES III	IV	M.A.	C.A.	HEARING COMPREHENSION	READING SCORES III	IV
1	9:6	13:10	125	48	35	9:3	13:2	90	9	8
2	8:4	13:4	118	41	35	8:2	13:1	45	4	10
3	9:9	13	118	25	7	9:4	12:8	88	25	23
4	10	15:6	116	45	18	10	15:1	84	26	19
5	9:9	14:7	115	58	26	9:9	14:9	83	30	19
6	9:7	14:1	112	37	15	9:2	14:7	80	24	11
7	9:1	15:9	112	43	14	8:11	15:2	77	14	14
8	8:8	12:6	109	44	17	8:3	12:6	76	16	11
9	8:10	15:10	106	7	8	8:10	15:4	71	53	28
10	9:6	13:5	106	24	17	9:8	13	76	19	19
11	9:4	12:3	106	18	10	9:4	12:9	69	14	14
12	9:3	15:3	105	29	20	9:8	15:4	78	24	12
13	9:3	12:6	104	49	26	9:7	13	55	28	7
14	9:7	14:2	104	5	0	9:1	14	73	47	16
15	8:11	13:9	104	24	18	8:11	14	66	3	9
16	9:9	13:10	102	29	21	10:4	14:3	68	38	22
17	8:2	12:3	100	47	16	8:2	12:3	66	18	9
18	8:8	13:9	98	40	13	8:6	13:6	70	18	0
19	8:9	12:8	98	28	19	9:1	13	54	13	6
20	8:7	15:8	98	26	19	8:11	15:1	64	11	11
21	8:4	12:7	98	5	1	8:1	12	52	7	14
22	8:10	12:5	97	28	10	8:9	12:9	61	16	11
23	9:3	13:10	94	13	4	9:3	13:5	67	4	5
24	9:1	14	93	27	13	8:8	14:5	64	12	6
25	8:11	13:2	92	32	37	8:11	13	49	27	11
26	9	12:4	91	23	16	8:10	12:4	64	15	3
27	9:4	14:11	90	44	20	9:4	14:5	40	19	0
28	7:4	14:9	90	14	9	7:2	14:11	58	14	7
29	8	12	89	14	7	7:11	11:9	32	2	7
30	10:	14:11	82	30	10	9:4	15:4	53	8	6
31	8	14	80	16	4	7:9	14:5	43	3	1
32	8:1	12:10	79	15	12	7:11	13:2	46	6	9
33	7:9	13:10	79	1	3	7:9	13:5	48	9	6
34	9:3	14:4	75	17	21	8:11	14:5	42	43	6
35	6:10	12:11	74	2	3	6:6	13:3	28	4	6
36	7:9	11:8	74	10	9	7:4	11:6	45	8	7
37	7:11	12:7	61	6	4	7:11	12:9	31	6	8

DURRELL-SULLIVAN READING ANALYSIS

For Grades 2 to 6

By DONALD D. DURRELL
Professor of Education and Director of the Educational Clinic, Boston University

and HELEN BLAIR SULLIVAN
Assistant Director of the Educational Clinic, Boston University

NAME ..... AGE ..... GRADE .....

SCHOOL ..... TEACHER .....

CITY ..... STATE .....

DATE ..... BOY OR GIRL .....

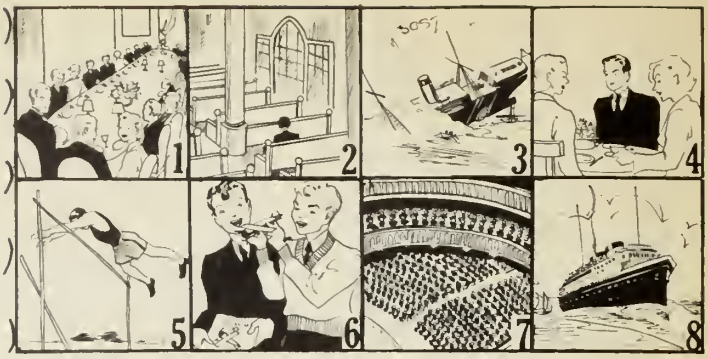
Test	Score	Grade
Hearing Comprehension 1. Vocabulary		
2. Paragraphs ..... Average Hearing Comprehension		
Reading Comprehension 1. Vocabulary		
2. Paragraphs ..... Average Reading Comprehension		
Spelling		
Written Recall Rating		

Hearing Vocabulary

1

A( ) B( ) C( ) D( ) E( )

6



A( ) B( ) C( ) D( ) E( )

2

A( ) B( ) C)( ) D( ) E( )

7

A( ) B( ) C( ) D( ) E( )

3

A( ) B( ) C( ) D( ) E( )

8

A( ) B( ) C( ) D( ) E( )

4

A( ) B( ) C( ) D( ) E( )

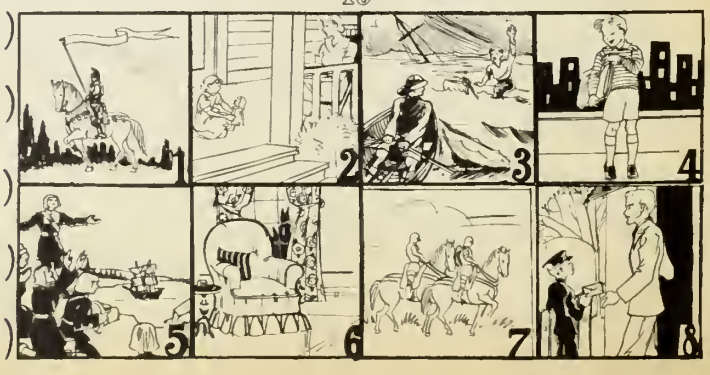
9

A( ) B( ) C( ) D( ) E( )

5

A( ) B( ) C( ) D( ) E( )

10



A( ) B( ) C( ) D( ) E( )

Hearing Vocabulary

11

A( )
B( )
C( )
D( )
E( )

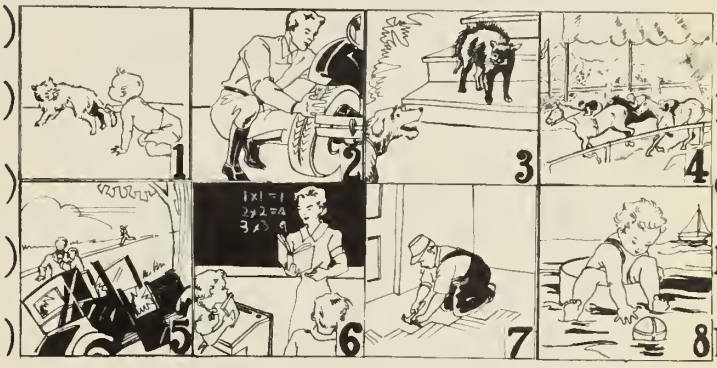
13

A( )
B( )
C( )
D( )
E( )

12

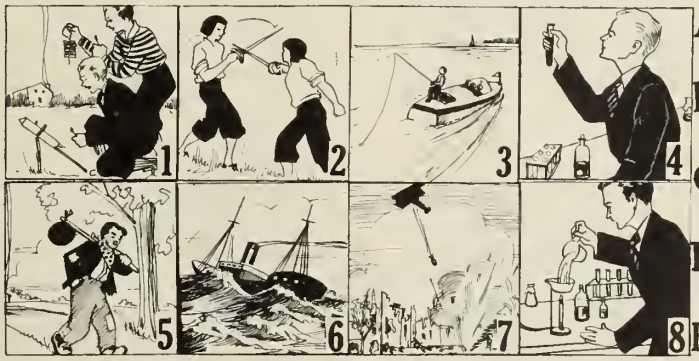
A( )
B( )
C( )
D( )
E( )

14



A( )
B( )
C( )
D( )
E( )

15



A( )
B( )
C( )
D( )
E( )

Written Recall

Hearing Comprehension

1

A( )

B( )

C( )

D( )

E( )

3

A( )

B( )

C( )

D( )

E( )

2

A( )

B( )

C( )

D( )

E( )

4

A( )

B( )

C( )

D( )

E( )

Hearing Comprehension

5

A( )

B( )

C( )

D( )

E( )

7

A( )

B( )

C( )

D( )

E( )

6

A( )

B( )

C( )

D( )

E( )

8

A( )

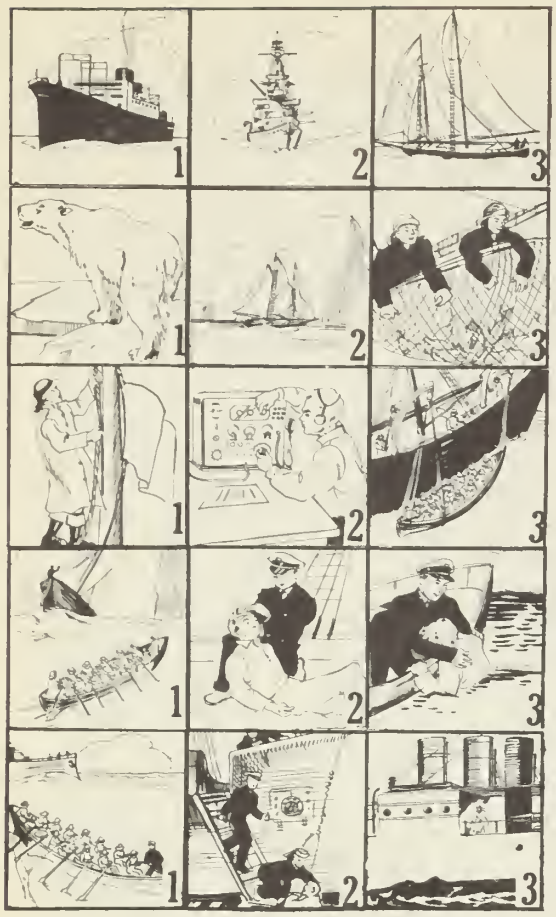
B( )

C( )

D( )

E( )

9

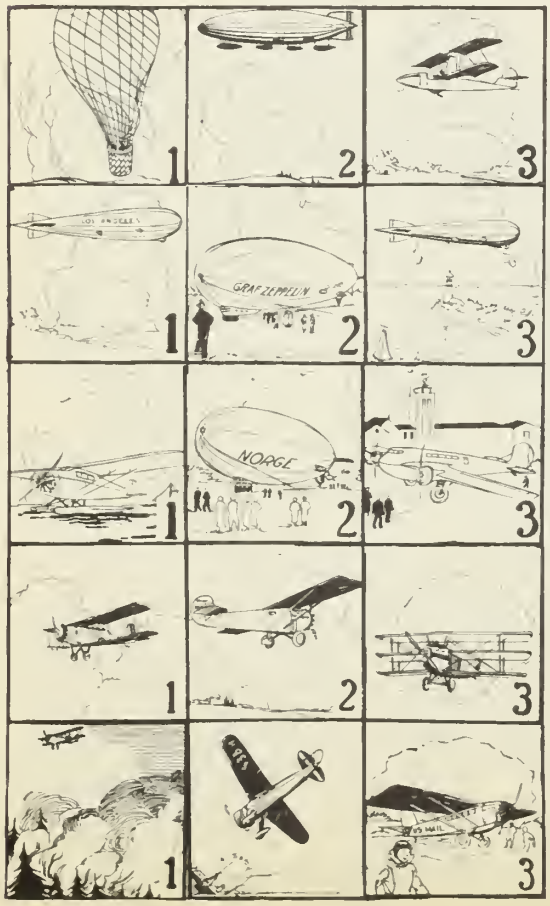


A( )
B( )
C( )
D( )
E( )

11

A( )
B( )
C( )
D( )
E( )

10



A( )
B( )
C( )
D( )
E( )

12

A( )
B( )
C( )
D( )
E( )

Word Meaning

An apple is a kind of 1. paint 2. metal 3. animal 4. fruit 5. chair ( )

Large means 1. angry 2. big 3. hurt 4. little 5. like ( )

To shut means to 1. help 2. give 3. take 4. run 5. close ( )

1. A dog is an 1. answer 2. elephant 3. animal 4. excuse 5. orange ( )
2. A robin is a 1. crow 2. bird 3. bug 4. flower 5. leaf ( )
3. To bring is to 1. find 2. carry 3. think 4. lose 5. fall ( )
4. Small means 1. hurry 2. large 3. little 4. like 5. help ( )
5. To fall is to 1. pay 2. lift 3. touch 4. drop 5. face ( )
6. To bake is to 1. break 2. lose 3. cook 4. speak 5. copy ( )
7. A dollar is 1. copper 2. money 3. business 4. healthy 5. clothing ( )
8. A voice is used to 1. clamp 2. speak 3. point 4. write 5. mark ( )
9. A potato is a 1. song 2. planet 3. postman 4. table 5. vegetable ( )
10. Beef is a kind of 1. horse 2. boat 3. maze 4. ranch 5. meat ( )
11. To chop means 1. roll 2. note 3. come 4. chide 5. cut ( )
12. If a thing is above it is 1. glad 2. higher 3. short 4. pleasant 5. between ( )
13. A thing that is bent is 1. warm 2. crooked 3. sharp 4. straight 5. tight ( )
14. Travel means 1. trouble 2. journey 3. serious 4. prepare 5. junction ( )
15. Oil is used for 1. fuel 2. water 3. fun 4. writing 5. presents ( )
16. Quarrel means 1. stop 2. travel 3. fight 4. forget 5. throw ( )
17. A hall is a 1. horn 2. road 3. tooth 4. room 5. field ( )
18. An island is surrounded by 1. sugar 2. gardens 3. earth 4. salad 5. water ( )
19. Remain means 1. ride 2. measure 3. happen 4. accompany 5. stay ( )
20. Salt is used on 1. holidays 2. water 3. food 4. birds 5. flowers ( )
21. Marriage means 1. image 2. civil 3. bitter 4. obtain 5. wedding ( )
22. A carpenter makes things of 1. iron 2. stone 3. cement 4. wood 5. grass ( )
23. A maid is a 1. smile 2. father 3. girl 4. heart 5. fruit ( )
24. A palace is a 1. crown 2. storm 3. land 4. policeman 5. building ( )
25. A helmet is worn on the 1. knees 2. breast 3. feet 4. head 5. elbows ( )
26. When you miss school you are 1. tardy 2. absent 3. present 4. taught 5. fair ( )
27. A person is alone who is without 1. money 2. food 3. company 4. shelter 5. danger ( )
28. A stomach is part of the 1. sea 2. sky 3. body 4. country 5. world ( )
29. A man's daughter is his 1. child 2. parent 3. sister 4. son 5. niece ( )
30. Ill means 1. well 2. hungry 3. sick 4. safe 5. sorry ( )
31. Excellent means very 1. weak 2. poor 3. happy 4. good 5. tired ( )
32. A hive is for 1. oil 2. school 3. bees 4. peaches 5. robbers ( )
33. To tumble is to 1. type 2. ask 3. knock 4. fall 5. tickle ( )
34. A grandparent is an 1. antagonist 2. elephant 3. ancestor 4. imposter 5. umpire ( )
35. A smell is an 1. amount 2. answer 3. office 4. odor 5. idea ( )
36. An elm is a 1. mold 2. helm 3. bug 4. tree 5. tool ( )
37. A mule is a 1. splinter 2. pearl 3. beast 4. ditch 5. handle ( )

38. Costly things are 1. expensive 2. pliant 3. scorched 4. liberal 5. domestic ( )
39. An author is a 1. writer 2. policeman 3. statesman 4. treasurer 5. patron ( )
40. A mayor is an 1. expert 2. animal 3. invalid 4. umbrella 5. official ( )
41. A zone is a 1. number 2. stepson 3. region 4. sliver 5. habit ( )
42. To injure is to 1. slump 2. insure 3. wound 4. sell 5. splash ( )
43. To rouse means to 1. waken 2. rule 3. roast 4. throw 5. love ( )
44. Mild means 1. gentle 2. price 3. wild 4. new 5. behind ( )
45. Wicked means 1. generous 2. grateful 3. unselfish 4. evil 5. brilliant ( )
46. To make preparations is to get 1. over 2. measles 3. ready 4. upon 5. cloudy ( )
47. A selection is a 1. choice 2. capital 3. desire 4. bullet 5. folder ( )
48. To tour is to 1. prepare 2. toast 3. lean 4. travel 5. trust ( )
49. Twinkle means 1. wrinkle 2. ringing 3. pitiful 4. glisten 5. feeble ( )
50. Coarse cloth is 1. smooth 2. fine 3. rough 4. cold 5. short ( )
51. A bough is a 1. limb 2. leaf 3. pail 4. crest 5. trunk ( )
52. To welcome means to 1. endure 2. persist 3. receive 4. believe 5. practice ( )
53. A blunt thing is 1. thin 2. sharp 3. disagreeable 4. black 5. dull ( )
54. Circular means 1. careless 2. familiar 3. round 4. square 5. jealous ( )
55. Skillful means 1. laborious 2. excited 3. radical 4. expert 5. kindly ( )
56. Interior means 1. inferior 2. above 3. empty 4. dreary 5. inside ( )
57. Stupid means 1. studious 2. false 3. stylish 4. cowardly 5. dull ( )
58. To surrender is to 1. surround 2. soften 3. colonize 4. dance 5. yield ( )
59. Destruction causes 1. discipline 2. ruin 3. government 4. scandal 5. satisfaction ( )
60. To convince means to 1. declare 2. design 3. combine 4. persuade 5. nourish ( )
61. A sign is an 1. offering 2. agreement 3. acquaintance 4. indication 5. address ( )
62. A portion is a 1. gate 2. home 3. wall 4. riddle 5. share ( )
63. To overcome is to 1. discover 2. happen 3. anticipate 4. defeat 5. worry ( )
64. An insult is an 1. instinct 2. insertion 3. anouncement 4. embrace 5. offence ( )
65. To confirm is to make 1. angry 2. equal 3. trouble 4. time 5. certain ( )
66. Valiant means 1. valid 2. lenient 3. brave 4. royal 5. loyal ( )
67. To kindle means to 1. pick 2. range 3. light 4. soil 5. assist ( )
68. Abrupt means 1. exclude 2. neutral 3. recent 4. sudden 5. rugged ( )
69. Fatigue means 1. fatal 2. faithful 3. conflict 4. dodge 5. weariness ( )
70. A durable thing is 1. fantastic 2. courteous 3. modified 4. lasting 5. moist ( )
71. Fourscore is the same as 1. fourteen 2. fortnight 3. eighty 4. twenty 5. four ( )
72. To ratify is to 1. confuse 2. approve 3. assist 4. report 5. poison ( )
73. To rebel is to 1. realize 2. pledge 3. justify 4. resist 5. flourish ( )
74. Sullen means 1. sultry 2. satisfied 3. credulous 4. harmful 5. surly ( )
75. Probability means 1. disheveled 2. originality 3. likelihood 4. sincerity 5. enthusiasm ( )

Sample.

One warm, sunny day Helen and her brother went on a trip to the beach. Their mother and aunt went with them. They took their bathing suits so that they could all go into the water. When noontime came they had lunch on the sand. After lunch the children gathered seashells. They saw a starfish and some funny little crabs.

A. What did Helen and her brother do?
1. went to see their aunt 2. went to the seashore 3. went on a train 4. went for crabs 5. went fishing ( )

B. The weather was 1. quiet 2. funny 3. fair 4. gloomy 5. rainy ( )

C. The best name for this story is 1. Helen and her Aunt 2. Gathering Shells 3. Eating Lunch Outdoors 4. One Warm Day 5. A Trip to the Beach ( )

I.

Mary and John go to camp as soon as school closes in the summer. They go on the train and stay until it is time for school to open again in the fall. They have a happy time at camp because there are many other boys and girls there too. They ride, swim, and play games together every day.

A. When do Mary and John go to camp?
1. before school 2. when school is over 3. in the fall 4. when school starts 5. every day ( )

B. Which word tells what kind of a time the children have at camp? 1. lonesome 2. sad 3. joyous 4. funny 5. weary ( )

C. How do the children travel to camp?
1. on a train 2. on a bus 3. in an automobile 4. on a car 5. in an aeroplane ( )

D. The best name for this story would be
1. Close of School 2. Playing Games 3. A Trip on the Train 4. A Summer at Camp 5. The Boys at Camp ( )

E. Why do the children enjoy camp life?
1. glad to be away for the summer 2. like the ride on the train 3. glad to be out of school 4. fun staying in camp 5. fun playing games with the other children ( )

II.

Jack had a new fishline. His father took him fishing in a little brook at the back of his grandfather's house. Jack was the first to feel a bite. There was a strong pull at his line. He tried hard to pull the fish out of the water, but it pulled so hard his father had to help him. He was happy when he saw his fish lying on the grass near the stream.

A. Jack went 1. to his grandfather's house 2. into the water 3. fishing with his father 4. to buy a fishline 5. to the ocean to fish ( )

B. The fish 1. helped 2. struggled 3. ate 4. tried 5. fell ( )

C. Jack tried 1. to fish near the stream 2. pull his father back 3. land his own fish 4. put fish in the brook 5. to lie on the grass ( )

D. The best name for this story is 1. A Trip to Grandfather's 2. Catching Some Fish 3. Jack's Fishing Trip 4. Buying a New Fishline 5. How Father Fished ( )

E. Jack enjoyed his trip because 1. the fish got away 2. the brook was near grandfather's 3. he caught a fine fish 4. he went to a stream 5. his father helped him ( )

III.

In the cold Northlands many animals go to sleep for the whole winter. They have to store up enough fat on their bodies in the summer time to last them all winter while they are sleeping. These animals grow huge in the summer. Bears, which are among the animals who sleep all winter, get so large in the summer that they can hardly move about. All these animals who sleep during the winter crawl into caves or hollow trees when winter nears and stay until spring comes once more. When they come out they are very thin and starving.

A. How do the animals who sleep through the winter get their winter food? 1. by carrying their food in with them 2. by getting fat in summer 3. by coming out for food as they need it 4. by eating the bark of trees 5. by living on small animals ( )

B. The climate where these animals live is very 1. windy 2. warm 3. breezy 4. cold 5. hot ( )

C. How do the animals look when they come out of the cave? 1. huge and fat 2. lean and hungry 3. thin and tired 4. large and strong 5. huge and starving ( )

D. The best title for this story would be 1. Bears Who Go Into Caves 2. Thin and Hungry Animals 3. Animals Who Sleep Through the Winter 4. Large Animals Sleep in Winter 5. While They Are Sleeping ( )

E. The animals who sleep through the winter make winter dens 1. in the summer time 2. in the open woods 3. when spring comes 4. in caverns or hollow logs 5. while they are sleeping ( )

IV.

The St. Bernards are among the bravest of dogs. They are large and very strong. In Switzerland these dogs are trained to go out and find travellers who are lost in the snowdrifts on the high mountains. A first aid kit containing food and medicine is hung about their necks and a warm blanket is strapped on their backs. When they find worn out travellers they dig them out of the snow and help them if they are awake and able to move. If the traveller is injured and helpless the dog is trained to go back to the town below and bring aid. Many lives are saved every year by these fearless animals.

A. What is the most valuable thing that St. Bernard dogs do? 1. they can climb over snowdrifts 2. they are large and strong 3. they are trained to rescue lost travellers 4. they are good mountain climbers 5. they carry first aid kits ( )

B. The St. Bernard dog is 1. cowardly 2. speedy 3. courageous 4. rough 5. fierce ( )

C. How does the dog assist worn out travellers? 1. by digging large holes in the snow 2. climbing the drifts to the traveller 3. bringing first aid 4. covering him with a blanket 5. by his great strength ( )

D. The best title for this story is 1. Training Dogs 2. The Heroic St. Bernard 3. A Strange St. Bernard Dog 4. People Lost in Mountains 5. Travelling Through Snowdrifts ( )

E. What do the dogs do for the travellers they cannot help? 1. stand man on his feet 2. give him food and medicine 3. return to the village for aid 4. carry him down the mountain 5. give him the first aid kit ( )

V.

The camel possesses a most uncommon body which almost seems made to order for the many purposes he fills in the life of the desert people. His mouth is peculiarly fitted for securing food. The strong membrane and powerful teeth enable him to tear off the dry shrubs and stiff, prickly cactus of the desert. His hugh nostrils allow him to breathe deeply. They close tightly when a sandstorm arises, thus shutting out the choking sands. His hump, a mere lump of fat, is of great use if food fails, for he can obtain nourishment from it for many days. He is also provided with inside reservoirs which hold enough water to last him for four or five days. Unfortunately the camel is dull. To kneel down at a given signal is about the only trick he ever learns. Although the camel is homely he is nevertheless valuable, for without him many portions of the earth would remain untravelled.

A. The camel is 1. more intelligent than the horse 2. capable of learning a great deal 3. rather unintelligent 4. poorly taught 5. friendly and intelligent ( )

B. The body of the camel is 1. unfortunate 2. unusual 3. graceful 4. evil 5. inspiring ( )

C. The mouth of the camel 1. is harmed by thorny cactus 2. is small and tough 3. is well suited for procuring food 4. tightens when a sandstorm arises 5. provides an inside reservoir ( )

D. The best title for this story is 1. The Body of the Camel 2. The Usefulness of the Camel 3. The Stupidity of the Camel 4. Sandstorms on the Desert 5. How the Camel Eats ( )

E. The camel is 1. unsuited for desert travel 2. helpless in a sandstorm 3. a tricky animal 4. well adapted for desert travel 5. friendly and intelligent ( )

VI.

Bill vaulted the fence into the corral and faced the bucking pony. At his approach the little animal struck out with his fore feet, but Bill was quick and avoided him. The boy caught the pony close to the head and with a rapid movement sprang into the stirrups. Then began the real task. With head down, back up, and whinnying loudly, the animal reared into the air, bouncing back to earth with terrific force. He tried every trick possible to throw his rider, plunging and rearing in all directions, but Bill held on. Finally, after many minutes, the exhausted pony, wet with perspiration, stood still. His nostrils trembled, but one felt that though his body had been subdued, his spirit was still unbroken.

A. When Bill approached, the pony was 1. tired and impossible 2. quieted in spirit 3. impatient to be ridden 4. fatigued from overactivity 5. thrown to the ground ( )

B. The pony was finally 1. overbalanced 2. exultant 3. overpowered 4. distracted 5. restored ( )

C. The little pony tried to 1. outlive his rider 2. aid the boy 3. unseat his rider 4. exhaust the animal 5. butt Bill ( )

D. The best title for this story is 1. Riding the Range 2. An Exhausted Pony 3. Breaking a Pony 4. A Perspiring Pony 5. Bill Approached a Pony ( )

E. The article illustrates 1. how to enter a corral 2. a whinnying pony 3. trickery in riding 4. leading a pony 5. skill in horsemanship ( )

VII.

Studying bird life with a camera is certainly an entrancing sport. One can engage in it without destroying life, yet get great satisfaction from the thrilling activities it offers. The sport is appropriate for any time or place. From it one can derive all sorts of adventures, for to be a good photographer of birds in their native haunts it is necessary to climb trees and cliffs as well as travel on land and water. How interesting it is to find their nests, learn where they stay at various times during the day, how the young are fed and cared for, and to procure photographs of the birds in various attitudes. Hiking with the camera through the woods is always an enjoyment. There is a feeling of excitement and expectancy present, for one never knows at what moment he may come upon some unusual bird activity.

A. Making studies of bird life is interesting because 1. they haunt native places 2. of the various activities one can observe 3. it is always done on water 4. the young are fed and cared for 5. the sport is appropriate ( )

B. Using a camera in place of a rifle encourages wild life by promoting 1. destruction 2. conservation 3. dissatisfaction 4. conversation 5. haunts ( )

C. Bird study is a satisfying sport because 1. the young are fed 2. the birds like it 3. one can get eggs out of nests 4. it can be enjoyed during all seasons 5. one can use a rifle ( )

D. The best title for this story is 1. Interesting Birds 2. The Excitement of Adventure 3. Taming Wild Birds 4. Photography of Wild Birds 5. Destroying Bird Life ( )

E. Taking pictures of bird life is fascinating because 1. it is helped by a camera 2. it takes much time 3. it gives more bird pictures 4. it brings adventure without destruction of life 5. it scatters the birds about ( )

VIII.

In the part of our country which gets very little rain in the summer the ground must be wet by irrigation to make the plants grow. Otherwise all the crops would be spoiled by dry weather. This form of agriculture is carried on in states where snow is found high up in the mountains the entire year. A large reservoir is made by damming up the mountain streams. The snow, melting in summer, rushes into a stream. This in turn is joined to a large ditch. At the head of the ditch is an intake gate. This can be opened and closed at will. In this way water is drawn off and the various fields are irrigated. The water can be turned on whenever the fields need it. The parts of our country where irrigation is possible seldom have crop failures, because water can be secured when it is needed.

A. This form of agriculture is carried on where 1. crops are grown in summer 2. mountain streams make it possible 3. cities are near 4. there are large reservoirs 5. there are crop failures ( )

B. Because irrigation is possible crop failures are 1. increased 2. reduced 3. possible 4. permitted 5. eliminated ( )

C. How do they stop the water from flooding the fields? 1. by damming the ditch 2. by use of gates 3. by opening the reservoir 4. by irrigating the fields 5. by drawing off the water ( )

D. The best title for this story would be 1. Damming Up Streams 2. Supplying Water for Irrigation 3. Crops in Dry Weather 4. Building Huge Dams 5. Supplying Water for Colorado ( )

E. Land that is irrigated yields better harvests because 1. in summer it gets little rain 2. it is high up in the mountains 3. water may be applied as needed 4. the water can be turned off 5. agriculture is carried on ( )

IX.

Sugar beets must be raised where cheap labor can be secured because the plants require a great deal of cultivation, most of which must be done by hand. First the plants are thinned and then blocked to get the correct number in the rows. The roots from which the sugar is extracted are not like the red beets which are eaten as vegetables, but are more like the common turnips. These roots are washed, sliced, and soaked in water. The water is later drawn off and boiled into beet syrup. Then the syrup is changed to a brown sugar called raw sugar. The last step is to send the raw sugar through the refinery, where it is cleaned and whitened. Then the white sugar is ready to be boxed and sold for use in our homes.

A. Sugar beets must be raised where labor is not expensive because they require 1. much tillage 2. much washing 3. many plants in a row 4. soaking in water 5. much boiling ( )

B. What kind of labor is most used in the raising of sugar beets? 1. machine 2. manual 3. difficult 4. easy 5. unusual ( )

C. The raw sugar is 1. made into syrup 2. refined and whitened 3. boxed and sold 4. left as it is 5. changed to brown sugar ( )

D. The best title for this story is 1. Blocking and Thinning Beets 2. Colorado Sugar Beets 3. How Beet Sugar is Obtained 4. Cleaning Raw Sugar 5. How Beet Sugar is Whitened ( )

E. Raising sugar beets requires 1. inexpensive labor 2. syrup changed to sugar 3. sugar to be cleaned 4. many common turnips 5. raw sugar ( )

X.

Airplanes are growing more important every year. Today they have travelled to almost every part of the world and into many places that would otherwise have remained unexplored. Daring pilots have been responsible for many outstanding feats. They have gone to the aid of dying men when there was no other opportunity of reaching them. At one time serum was carried to Alaska by plane and saved the lives of many children who were seriously ill of diphtheria. Every day of the year, and in all kinds of weather, Uncle Sam's pilots carry the mail through the air. Practically every day one reads of some new achievements of airplanes.

A. Airplanes have rendered valuable service to humanity by 1. having no other opportunity 2. aiding the sick and dying 3. helping boys to become pilots 4. carrying many diseases 5. taking passengers in the air ( )

B. The life of an airplane pilot is 1. lonesome 2. easy 3. hazardous 4. happy 5. high ( )

C. Airplanes are used for a variety of services such as 1. exploring, carrying mail, and aiding the sick 2. carrying mail in all sorts of weather 3. bringing serum to diphtheria patients 4. serving humanity 5. travelling in all kinds of weather ( )

D. The best title for this story is 1. Mail Pilots 2. Exploring With Airplanes 3. Value of Airplanes 4. Life of an Air Pilot 5. A Trip to Alaska ( )

E. The accomplishments of airplanes are 1. unimportant 2. understanding 3. trivial 4. significant 5. serious ( )

XI.

The mode of living on the plantations of the South was vastly different from that of the early New England people. The spacious Southern mansions, surrounded by the many slave cabins, gardens, and poultry yards, were often in themselves small villages. While many of these planters were living in wasteful extravagance, the Puritans of New England were living in modest two room homes. They were thrifty people who were not in favor of the riotous living and entertaining of the planters. The New England people were more interested in the establishment of good common schools for all people, while the rich planters did not favor this idea. They had tutors at home for their children, or sent them to Europe to be educated.

A. The New Englanders were interested in 1. having tutors for their sons 2. organizing good public schools 3. educating their children in England 4. living in two rooms 5. riotous living and entertaining ( )

B. Which word best describes a Southern planter? 1. frugal 2. gallant 3. brave 4. weak 5. lavish ( )

C. Which word best describes a New England home? 1. magnificent 2. insignificant 3. unpretentious 4. extensive 5. valuable ( )

D. The best title for this story is 1. A story of education 2. A Comparison of the Life of the Planters 3. Northern and Southern Modes of Living 4. The Thrifty New England People 5. Good Schools for All ( )

E. The Southern gentleman desired 1. common education for all 2. the organizing of good public schools 3. good education for members of his own family 4. tutors for children in New England 5. good free schools for planters' sons ( )

XII.

The pulmotor, a device for the resuscitation of persons suffering from gas poisoning, drowning, or electric shock, consists of a tank of compressed oxygen which is thinned with air and pumped into the lungs of the patient. It must be remembered that if breathing is to be produced artificially the process must be begun within ten minutes after the breathing has stopped or the person may not revive. Therefore it is not safe to wait to begin to revive the person until the pulmotor arrives. Some other method of restoring consciousness should be attempted in order to avoid a fatality. While the pulmotor can be of great advantage, it is also a very dangerous instrument in the hands of an inexperienced person. There is great peril, if the instrument is not properly handled, of drawing the air out of the small air cells in the lungs and collapsing them.

A. The pulmotor is an instrument for 1. collapsing the lungs 2. avoiding drowning 3. inducing artificial respiration 4. administering electric shock 5. inducing carbon monoxide ( )

B. What is conveyed to the patient by means of the pulmotor? 1. concentrated oxygen 2. a device of great advantage 3. air cells which collapse 4. a mixture of oxygen diluted with air 5. a combination of oxygen and nitrogen ( )

C. If the person is to be resuscitated, artificial respiration should be started 1. by a dangerous instrument 2. for collapsing the lungs 3. within ten minutes 4. by a tank of oxygen 5. by an inexperienced person ( )

D. What should one do while waiting for the pulmotor? 1. attempt to avoid the instrument 2. apply another type of resuscitation 3. pump oxygen from a tank 4. draw air out of lungs 5. dilute the air ( )

E. Why is the pulmotor a menace in the hands of a novice? 1. the danger of injuring the stomach 2. might not arrive on time 3. can be of great advantage 4. should be properly handled 5. danger of collapsing the lungs ( )

Spelling

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

I.

Blackie was a little kitten. One day a big dog chased him. He became frightened and ran up a tree. After he got high up in the branches he was afraid to come down. The little girl who owned him came and stood beneath the tree. She called to Blackie and showed him his dish of milk, hoping he would want his supper enough to try to come down. But he would not come. Finally her father called the fire chief. He sent a fireman with a ladder. The man went up the tree and carried little Blackie down. The little girl was happy to have her kitten again.

II.

John could hardly wait, so anxious was he to try the new canoe he had received for his birthday. As soon as he finished his breakfast he raced with his brother and sister to the lake. Here they examined his splendid new gift. John's father showed him how to use the paddles and told him that he might take his brother and sister for a short ride in the canoe, but warned him that he must not go too far from shore before he was thoroughly familiar with handling the new craft. All went smoothly, and gradually John forgot his caution and drifted farther from shore. Suddenly there came a great gust of wind. In a moment the lake was filled with heavy waves. John struggled to keep the little canoe upright. Luckily they were not far from a small island. He steered for this and reached the shore just as a particularly large wave turned the boat bottom side up. The three children scrambled from the water out on to the island just as another huge wave came in. The boat floated away, and John feared he had lost his precious gift. But a party in a little steamer presently came to the aid of the stranded children and rescued the boat which had blown a distance away.

RECORD BOOKLET — *Form L*

FOR THE REVISED STANFORD-BINET SCALE

as described in Terman and Merrill's Measuring Intelligence

No.....

Series.....

Name..... Examiner..... C.A.....

Sex..... Birthdate..... Date..... M.A.....

School..... Grade..... I.Q.....

Parent..... Address.....

Birthplace..... of father..... of mother.....

Occupation of father..... of mother.....

Race..... Nationality of descent.....

TEST BEHAVIOR

Willingness	enthusiastic eagerness	enters actively into task	normal attitude because proper	disagreeable task	active objection
Self-confidence	extremely self-confident; relies on own ability	rather self-confident	neither distrustful nor entirely self-reliant	inclined to distrust own ability	extremely lacking in self-confidence; constantly distrustful of own ability
Social confidence	perfectly assured in personal contacts	rather confident	normal for age	rather shy	shy, reserved, reticent
Attention	completely absorbed by task	little interference from distracting stimuli	normal; attention to outside stimuli does not impair efficiency	easily distracted by extraneous stimuli or by own ideas, but returns readily to task	abstracted; difficult to get and hold attention

TEST SUMMARY

	Yrs.	Mos.		Yrs.	Mos.		Yrs.	Mos.
II			VI			XIII		
II–6			VII			XIV		
III			VIII			A.A.		
III–6			IX			S.A.I.		
IV			X			S.A. II		
IV–6			XI			S.A. III		
V			XII					

Time..... Total.....

HOUGHTON MIFFLIN COMPANY

BOSTON · NEW YORK · CHICAGO · DALLAS · ATLANTA · SAN FRANCISCO

The Riverside Press Cambridge

YEAR II (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1. *Three-hole form board (1+) *a)* *b)*

☐ 2. Identifying objects by name (4+)

a) Kitty *b)* Button *c)* Thimble *d)* Cup *e)* Engine *f)* Spoon

☐ 3. *Identifying parts of the body (same as II–6, 2) (3+)

a) Hair *b)* Mouth *c)* Ears *d)* Hands

☐ 4. Block building: Tower

☐ 5. *Picture vocabulary (same as II–6, 4; III, 2; III–6, 2; IV, 1) (2+)

1. Shoe	4. Bed	7. Table	10. Basket	13. Tree	16. Pocket knife
2. Clock	5. Scissors	8. Hand	11. Glasses	14. Cup	17. Stool
3. Chair	6. House	9. Fork	12. Gun	15. Umbrella	18. Leaf

☐ 6. *Word combinations

Alternate. Obeying simple commands (same as III–6, 1) (2+)

Mos._____

YEAR II–6 (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1. *Identifying objects by use (same as III–6, 5) (3+)

a) Cup *b)* Shoe *c)* Penny *d)* Knife *e)* Automobile *f)* Iron

☐ 2. Identifying parts of the body (same as II, 3) (4+)

☐ 3. *Naming objects (4+)

a) Chair *b)* Automobile *c)* Box *d)* Key *e)* Fork

☐ 4. *Picture vocabulary (same as II, 5; III, 2; III–6, 2; IV, 1) (9+)

☐ 5. *Repeating 2 digits (1+)

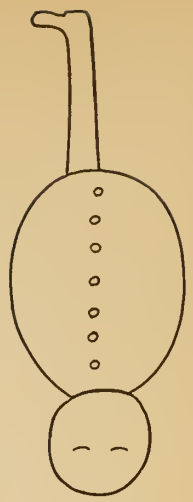
a) 4–7_____ *b)* 6–3_____ *c)* 5–8_____

☐ 6. Three-hole form board: Rotated (II, 1 must precede) (1+) *a)* *b)*

Alternate. Identifying objects by name (same as II, 2) (5+)

Mos._____

Note. — The tests marked with a * constitute an abbreviated scale, for use in case there is not time to give a complete test. See page 31 of "Measuring Intelligence."



YEAR III (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1. Stringing beads (4+) (2 min.) No. strung.....

☐ 2. *Picture vocabulary (same as II, 5; II–6, 4; III–6, 2; IV, 1) (12+)

☐ 3. *Block building: Bridge

☐ 4. *Picture memories (1+) *a)* *b)*

☐ 5. Copying a circle (1+) *a)* *b)* *c)*

☐ 6. *Repeating 3 digits (1+)

a) 6–4–1..... *b)* 3–5–2..... *c)* 8–3–7.....

Alternate. Three-hole form board: Rotated (same as II–6, 6) (2+)

Mos......

YEAR III–6 (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1. *Obeying simple commands (3+)

a) *b)* *c)*

☐ 2. *Picture vocabulary (same as II, 5; II–6, 4; III, 2; IV, 1) (15+)

☐ 3. Comparison of sticks (3 of 3, or 5 of 6)

a) *b)* *c)* *d)* *e)* *f)*

☐ 4. Response to pictures I (2+)

a) Dutch Home

b) Canoe

c) Postoffice

☐ 5. *Identifying objects by use (same as II–6, 1) (5+)

☐ 6. *Comprehension I (1+)

a) *b)*

Alternate. Drawing a cross

Mos......

YEAR IV (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1.*Picture vocabulary (same as II, 5; II–6, 4; III, 2; III–6, 2) (16+)

☐ 2.*Naming objects from memory (2+) *a)* *b)* *c)*

☐ 3. Picture completion: Man (same as V, 1) (1 point)

☐ 4.*Pictorial identification (3+)

a) Stove *b)* Umbrella *c)* Cow *d)* Rabbit *e)* Moon *f)* Cat

☐ 5.*Discrimination of forms (8+) No. correct.....

☐ 6. Comprehension II (2+)

a) *b)*

Alternate. Memory for sentences I (1+)

a) We are going to buy some candy for mother.

b) Jack likes to feed the little puppies in the barn.

Mos......

YEAR IV–6 (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1. Aesthetic comparison (3+) *a)* *b)* *c)*

☐ 2.*Repeating 4 digits (1+)

a) 4–7–2–9..... *b)* 3–8–5–2..... *c)* 7–2–6–1.....

☐ 3.*Pictorial likenesses and differences (same as VI, 5) (3+)

a) *b)* *c)* *d)* *e)*

☐ 4. Materials (2+) *a)* Chair *b)* Dress *c)* Shoe

☐ 5.*Three commissions (3+) *a)* *b)* *c)*

☐ 6.*Opposite analogies I (same as VII, 5) (2+)

a) *b)* *c)* *d)* *e)*

Alternate. Pictorial identification (same as IV, 4) (4+)

Mos......

YEAR V (6 tests, 1 month each; or 4 tests, 1½ months each)

☐ 1.*Picture completion: Man (same as IV, 3) (2 points)

☐ 2. Paper folding: Triangle

☐ 3.*Definitions (2+)

a) Ball *b)* Hat *c)* Stove

☐ 4. Copying a square (1+) *a)* *b)* *c)*

☐ 5.*Memory for sentences II (1+)

a) Jane wants to build a big castle in her playhouse.

b) Tom has lots of fun playing ball with his sister.

☐ 6.*Counting four objects (2+) *a)* *b)* *c)*

Alternate. Knot

Mos......

(There is no heading *V–6* and there are only six months of credit between the headings *Year V* and *Year VI* because each group of tests covers the period immediately preceding its age heading, in this case the period from *Year IV–6 to Year V.*)

YEAR VI (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. *Vocabulary (5+) No. words.....

☐ 2. *Copying a bead chain from memory I (2 min.)

☐ 3. Mutilated pictures (4+)

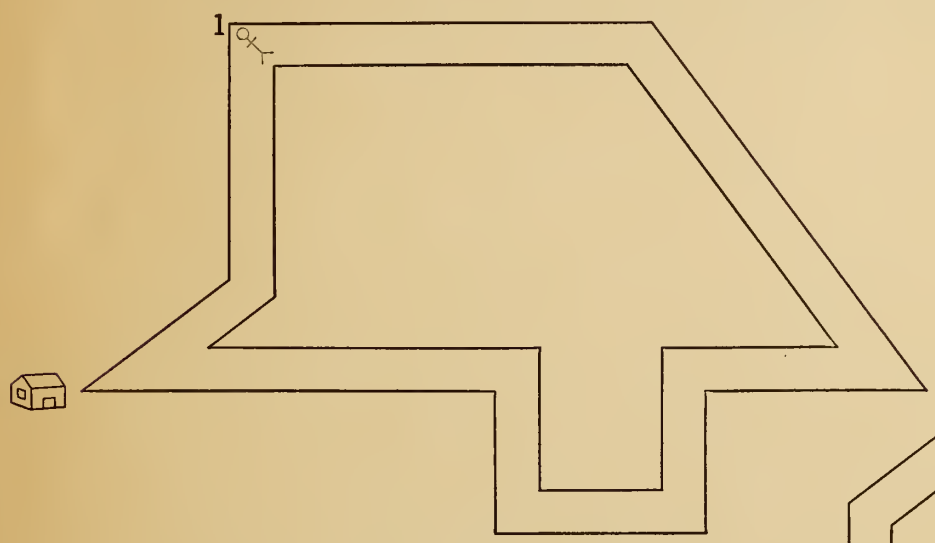
a) *b)* *c)* *d)* *e)*

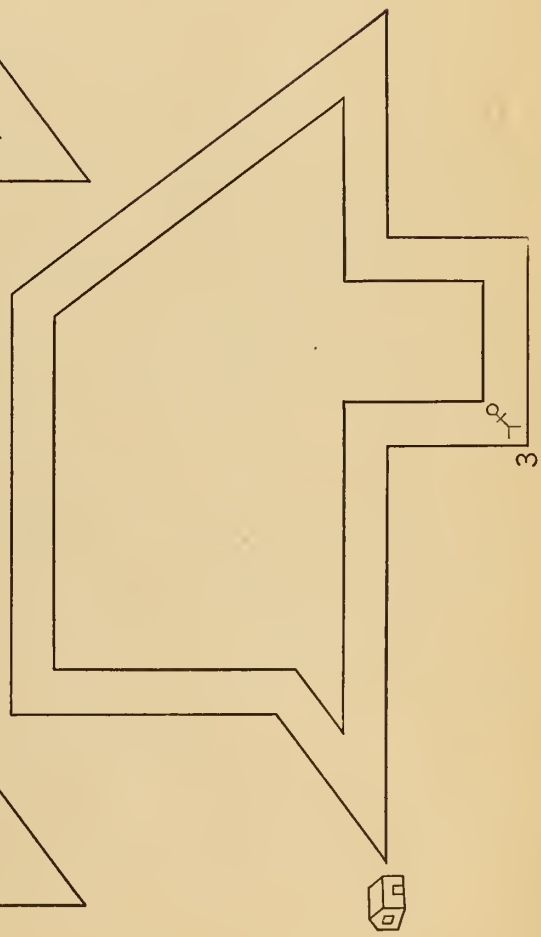
☐ 4. *Number concepts (3+) *a)* *b)* *c)* *d)*

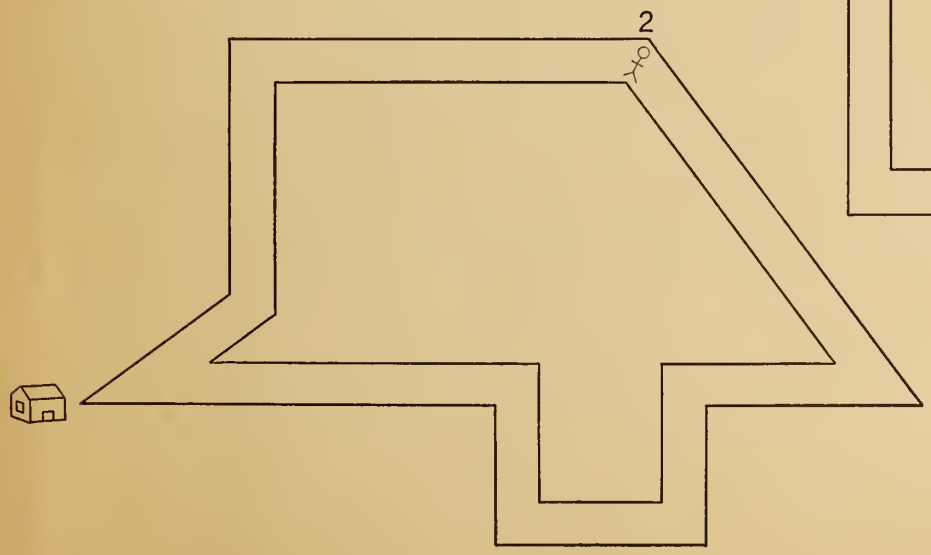
☐ 5. *Pictorial likenesses and differences (same as IV–6, 3) (5+)

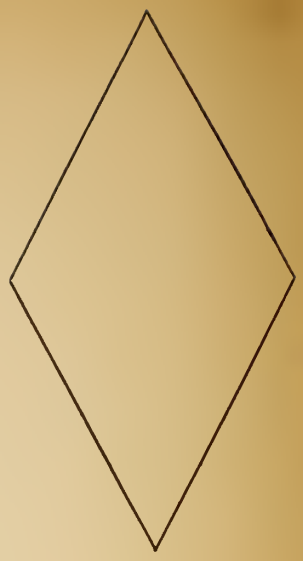
☐ 6. Maze tracing (2+) *a)* *b)* *c)*

Mos.....









YEAR VII (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. Picture absurdities I (3+)
a)

b)

c)

d)

☐ 2. *Similarities: Two things (2+)
a) Wood and coal
b) Apple and peach
c) Ship and automobile
d) Iron and silver

☐ 3. *Copying a diamond (2+) *a*) *b*) *c*)

☐ 4. Comprehension III (2+)
a)
b)
c)

☐ 5. *Opposite analogies I (same as IV–6, 6) (5+)
a) *b*) *c*) *d*) *e*)

☐ 6. *Repeating 5 digits (1+)
a) 3–1–8–5–9..... *b*) 4–8–3–7–2..... *c*) 9–6–1–8–3.....

Mos.....

YEAR VIII (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. *Vocabulary (8+) No. words.....

☐ 2. Memory for stories: The Wet Fall (5+)
a) ..... *b*)..... *c*)..... *d*).....
e) ..... *f*).....

☐ 3. *Verbal absurdities I (3+)
a)

b)

c)

d)

YEAR VIII (*Continued*)

☐ 4. *Similarities and differences (3+)

a) Baseball — orange

b) Aeroplane — kite

c) Ocean — river

d) Penny — quarter

☐ 5. *Comprehension IV (2+)

a)
b)
c)

☐ 6. Memory for sentences III (1+)

a) Fred asked his father to take him to see the clowns in the circus.
b) Billy has made a beautiful boat out of wood with his sharp knife.

Mos._____

YEAR IX (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. Paper cutting I (same as XIII, 3) (1+) *a*) *b*)

☐ 2. Verbal absurdities II (same as XII, 2) (3+)

a)

b)

c)

d)

e)

☐ 3. *Memory for designs (same as XI, 1) (1+ or 2 with ½ credit each)

a) *b*)

☐ 4. *Rhymes: New form (3+)

a) *b*) *c*) *d*)

☐ 5. *Making change (2+)

a) 10–4_____ *b*) 15–12_____ *c*) 25–4_____

☐ 6. *Repeating 4 digits reversed (1+)

a) 8–5–2–6_____ *b*) 4–9–3–7_____ *c*) 3–6–2–9_____

Mos._____

YEAR X (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. *Vocabulary (11+) No. words.....

☐ 2. Picture absurdities II — Frontier Days

☐ 3. *Reading and report (35 seconds, 2 errors, 10 memories)

Memories..... Time for reading..... Mistakes.....

New York | September | 5th. | A fire | last night | burned | several houses | near the center | of the city. | It took some time | to put it out. | The loss | was fifty thousand | dollars, | and seventeen | families | lost their homes. | In saving | a girl | who was asleep | in bed, | a fireman | was burned | on the hands.

☐ 4. *Finding reasons I (2+)

a)

b)

☐ 5. *Word naming (28 words in one minute)

☐ 6. Repeating 6 digits (1+)

a) 4–7–3–8–5–9..... *b*) 5–2–9–7–4–6..... *c*) 7–2–8–3–9–4.....

Mos.....

YEAR XI (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. *Memory for designs (same as IX, 3) (1½+)

☐ 2. *Verbal absurdities III (2+)

a)

b)

c)

☐ 3. *Abstract words I (3+)

a) Connection
b) Compare
c) Conquer
d) Obedience
e) Revenge

☐ 4. Memory for sentences IV (1+)

a) At the summer camp the children get up early in the morning to go swimming.
b) Yesterday we went for a ride in our car along the road that crosses the bridge.

☐ 5. Problem situation

☐ 6. *Similarities: Three things (3+)

a) Snake — cow — sparrow
b) Rose — potato — tree
c) Wool — cotton — leather
d) Knifeblade — penny — piece of wire
e) Book — teacher — newspaper

Mos.....

YEAR XII (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1.*Vocabulary (14+) No. words.....

☐ 2.*Verbal absurdities II (same as IX, 2) (4+)

☐ 3. Response to pictures II: Messenger Boy

☐ 4. Repeating 5 digits reversed (1+)

a) 8–1–3–7–9..... *b*) 6–9–5–8–2..... *c*) 5–2–9–4–1.....

☐ 5.*Abstract words II (same as XIV, 6) (2+)

a) Constant
b) Courage
c) Charity
d) Defend

☐ 6.*Minkus completion (same as S.A. I, 3) (2+) (5 min.)

Mos......

YEAR XIII (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1. Plan of search

☐ 2. Memory for words (1+)

a) Cow, sand, glass, chair, bell.
b) Grace, truth, worth, peace, doubt.

☐ 3.*Paper cutting I (same as IX, 1) (2+)

☐ 4.*Problems of fact (2+)

a)
b)
c)

☐ 5.*Dissected sentences (2+) (1 min. ea.)

a)
b)
c)

☐ 6.*Copying a bead chain from memory II (2 min.)

Mos......

YEAR XIV (6 tests, 2 months each; or 4 tests, 3 months each)

☐ 1.*Vocabulary (16+) No. words.....

☐ 2.*Induction *a*) *b*) *c*) *d*) *e*) *f*) Rule:

☐ 3. Picture absurdities III: The Shadow

☐ 4.*Ingenuity (same as A.A., 6) (1+) (3 min. ea.)

a)
b)
c)

☐ 5. Orientation: Direction I (3+) *a*) *b*) *c*) *d*) *e*)

☐ 6.*Abstract words II (same as XII, 5) (3+)

Mos......

HURRY

COME TO LONDON

DPNF UP MPOEPO

HURRY

COME TO LONDON

BDNPLNDF SUNP KMNPMOCENPMO

AVERAGE ADULT (8 tests, 2 months each; or 4 tests, 4 months each)

☐ 1.*Vocabulary (20+) No. words.....

☐ 2.*Codes (1½+) (3 min. ea.) *a)* *b)*

☐ 3.*Differences between abstract words (2+)
- *a)* Laziness and idleness
- *b)* Poverty and misery
- *c)* Character and reputation

☐ 4. Arithmetical reasoning (2+) (1 min. ea.) *a)* *b)* *c)*

☐ 5. Proverbs I (2+)
- *a)*
- *b)*
- *c)*

☐ 6.*Ingenuity (same as XIV, 4) (2+) (3 min. ea.)

☐ 7. Memory for sentences V (1+)
- *a)* The red-headed woodpeckers made a terrible fuss as they tried to drive the young away from the nest.
- *b)* The early settlers had little idea of the great changes that were to take place in this country.

☐ 8. Reconciliation of opposites (same as S.A. II, 5) (3+)
- *a)* Heavy — light
- *b)* Tall — short
- *c)* Sick — well
- *d)* More — less
- *e)* Outside — inside
- *f)* Asleep — awake

Mos.....

SUPERIOR ADULT I (6 tests, 4 months each; or 4 tests, 6 months each)

☐ 1.*Vocabulary (23+) No. words.....

☐ 2. Enclosed box problem (3+) *a)* *b)* *c)* *d)*

☐ 3.*Minkus completion (same as XII, 6) (3+) (5 min.)

☐ 4.*Repeating 6 digits reversed (1+)

a) 4–7–1–9–5–2..... *b)* 5–8–3–6–9–4..... *c)* 7–5–2–6–1–8.....

☐ 5.*Sentence building (2+)
- *a)* Benefactor — institution — contribution
- *b)* Civility — requirement — employee
- *c)* Attainment — fortune — misery

☐ 6. Essential similarities (2+)
- *a)* Farming and manufacturing
- *b)* Melting and burning
- *c)* An egg and a seed

Mos.....

SUPERIOR ADULT II (6 tests, 5 months each; or 4 tests, 7½ months each)

☐ 1. *Vocabulary (26+) No. words.....

☐ 2. *Finding reasons II (2+)

a)

b)

☐ 3. *Repeating 8 digits (1+)

a) 7–2–5–9–4–8–3–6..... *b*) 4–7–1–5–3–9–6–2..... *c*) 4–1–9–3–5–8–2–6.....

☐ 4. *Proverbs II (2+)

a)

b)

☐ 5. Reconciliation of opposites (same as A.A., 8) (5+)

☐ 6. Repeating thought of passage: Value of Life

Many opinions have been given on the value of life. | Some call it good, | others call it bad. | It would be nearer correct to say that it is mediocre, | for on the one hand our happiness is never as great as we should like, | and on the other hand our misfortunes are never as great as our enemies would wish for us. | It is this mediocrity of life which prevents it from being radically unjust.

Mos.....

SUPERIOR ADULT III (6 tests, 6 months each; or 4 tests, 9 months each)

☐ 1. *Vocabulary (30+) No. words.....

☐ 2. *Orientation: Direction II (2+) *a*) *b*)

☐ 3. *Opposite analogies II (2+) *a*) *b*) *c*)

☐ 4. Paper cutting II

☐ 5. *Reasoning (5 min.)

☐ 6. Repeating 9 digits (1+)

a) 5–9–6–1–3–8–2–7–4..... *b*) 9–2–5–8–4–1–7–3–6..... *c*) 4–7–2–9–1–6–8–5–3.....

Mos.....

MINKUS COMPLETION

a) One cannot always be a hero,_____one can always be a man.

b) The streams are dry,_____there has been little rain.

c) _____either of us could speak, we were at the bottom of the stairs.

d) He is_____well grounded in geography_____his brother, _____he is not so quick in arithmetic.

VOCABULARY

Score_____

1. orange_____
2. envelope_____
3. straw_____
4. puddle_____
5. tap_____
6. gown_____
7. eyelash_____
8. roar_____
9. scorch_____
10. muzzle_____
11. haste_____
12. lecture_____
13. Mars_____
14. skill_____
15. juggler_____
16. brunette_____
17. peculiarity_____
18. priceless_____
19. regard_____
20. disproportionate_____
21. shrewd_____
22. tolerate_____
23. stave_____
24. lotus_____
25. bewail_____
26. repose_____
27. mosaic_____
28. flaunt_____
29. philanthropy_____
30. ochre_____
31. frustrate_____
32. incrustation_____
33. milksop_____
34. harpy_____
35. ambergris_____
36. piscatorial_____
37. depredation_____
38. perfunctory_____
39. limpet_____
40. achromatic_____
41. casuistry_____
42. homunculus_____
43. sudorific_____
44. retroactive_____
45. parterre_____

QUESTIONNAIRE

NAME

ADDRESS

PLACE OF BIRTH

OCCUPATION

WHERE EMPLOYED

DO YOU OWN YOUR OWN HOME?

NUMBER OF CHILDREN IN THE FAMILY

OTHER DEPENDENTS

HOW MANY ARE EMPLOYED IN THE FAMILY?

ARE YOU A CITIZEN?

LANGUAGE COMMONLY USED IN THE HOME